<110> Blumwald, Eduardo
      Apse, Maris
      Snedden, Wayne
      Aharon, Gilad

<120> HIGH SALT PLANTS AND USES FOR
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<150> US 60/078,474
<151> 1998-03-18

<150> US 09/271,584
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<150> US 10/155,535
<151> 2002-05-24

<150> US 60/395,637
<151> 2002-07-12

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<213> Arabidopsis thaliana

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            20                  25                  30
Cys Ile Val Leu Gly His Leu Leu Glu Glu Asn Arg Trp Met Asn Glu
            35                  40                  45
Ser Ile Thr Ala Leu Leu Ile Gly Leu Gly Thr Gly Val Thr Ile Leu
            50                  55                  60
Leu Ile Ser Lys Gly Lys Ser Ser His Leu Leu Val Phe Ser Glu Asp
65                  70                  75                  80
Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe Asn Ala Gly Phe
                85                  90                  95
Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Val Thr Ile Met Leu
            100                 .105                 110
Phe Gly Ala Val Gly Thr Ile Ile Ser Cys Thr Ile Ile Ser Leu Gly
            115                 120                 125
Val Thr Gln Phe Phe Lys Lys Leu Asp Ile Gly Thr Phe Asp Leu Gly
            130                 135                 140
Asp Tyr Leu Ala Ile Gly Ala Ile Phe Ala Ala Thr Asp Ser Val Cys
145                 150                 155                 160
Thr Leu Gln Val Leu Asn Gln Asp Glu Thr Pro Leu Leu Tyr Ser Leu
                165                 170                 175
Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val Val Val Phe
            180                 185                 190
Asn Ala Ile Gln Ser Phe Asp Leu Thr His Leu Asn His Glu Ala Ala
            195                 200                 205
Phe His Leu Leu Gly Asn Phe Leu Tyr Leu Phe Leu Leu Ser Thr Leu
            210                 215                 220
Leu Gly Ala Ala Thr Gly Leu Ile Ser Ala Tyr Val Ile Lys Lys Leu
225                 230                 235                 240
Tyr Phe Gly Arg His Ser Thr Asp Arg Glu Val Ala Leu Met Met Leu
                245                 250                 255
```

2

```
Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Phe Asp Leu Ser Gly
        260                 265                 270
Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser His Tyr Thr Trp
        275                 280                 285
His Asn Val Thr Glu Ser Ser Arg Ile Thr Thr Lys His Thr Phe Ala
        290                 295                 300
Thr Leu Ser Phe Leu Ala Glu Thr Phe Ile Phe Leu Tyr Val Gly Met
305                 310                 315                 320
Asp Ala Leu Asp Ile Asp Lys Trp Arg Ser Val Ser Asp Thr Pro Gly
                325                 330                 335
Thr Ser Ile Ala Val Ser Ser Ile Leu Met Gly Leu Val Met Val Gly
                340                 345                 350
Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Ser Asn Leu Ala Lys
        355                 360                 365
Lys Asn Gln Ser Glu Lys Ile Asn Phe Asn Met Gln Val Val Ile Trp
    370                 375                 380
Trp Ser Gly Leu Met Arg Gly Ala Val Ser Met Ala Leu Ala Tyr Asn
385                 390                 395                 400
Lys Phe Thr Arg Ala Gly His Thr Asp Val Arg Gly Asn Ala Ile Met
                405                 410                 415
Ile Thr Ser Thr Ile Thr Val Cys Leu Phe Ser Thr Val Val Phe Gly
                420                 425                 430
Met Leu Thr Lys Pro Leu Ile Ser Tyr Leu Leu Pro His Gln Asn Ala
        435                 440                 445
Thr Thr Ser Met Leu Ser Asp Asp Asn Thr Pro Lys Ser Ile His Ile
    450                 455                 460
Pro Leu Leu Asp Gln Asp Ser Phe Ile Glu Pro Ser Gly Asn His Asn
465                 470                 475                 480
Val Pro Arg Pro Asp Ser Ile Arg Gly Phe Leu Thr Arg Pro Thr Arg
                485                 490                 495
Thr Val His Tyr Tyr Trp Arg Gln Phe Asp Asp Ser Phe Met Arg Pro
            500                 505                 510
Val Phe Gly Gly Arg Gly Phe Val Pro Phe Val Pro Gly Ser Pro Thr
        515                 520                 525
Glu Arg Asn Pro Pro Asp Leu Ser Lys Ala
    530                 535


<210> 3
<211> 542
<212> PRT
<213> Ipomoea nil

<400> 3
Met Ala Phe Gly Leu Ser Ser Leu Leu Gln Asn Ser Asp Leu Phe Thr
 1               5                   10                  15
Ser Asp His Ala Ser Val Val Ser Met Asn Leu Phe Val Ala Leu Leu
        20                  25                  30
Cys Ala Cys Ile Val Leu Gly His Leu Leu Glu Glu Asn Arg Trp Val
        35                  40                  45
Asn Glu Ser Ile Thr Ala Leu Ile Ile Gly Leu Cys Thr Gly Val Val
    50                  55                  60
Ile Leu Leu Leu Ser Gly Gly Lys Ser Ser His Leu Leu Val Phe Ser
65                  70                  75                  80
Glu Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe Asn Ala
                85                  90                  95
Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Val Asn Phe Met Thr Ile
```

3

```
                100                     105                     110
Met Leu Phe Gly Ala Ile Gly Thr Leu Ile Ser Cys Ser Ile Ile Ser
        115                     120                     125
Phe Gly Ala Val Lys Ile Phe Lys His Leu Asp Ile Asp Phe Leu Asp
    130                     135                     140
Phe Gly Asp Tyr Leu Ala Ile Gly Ala Ile Phe Ala Ala Thr Asp Ser
145                     150                     155                     160
Val Cys Thr Leu Gln Val Leu Ser Gln Asp Glu Thr Pro Leu Leu Tyr
                165                     170                     175
Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val Val
                180                     185                     190
Leu Phe Asn Ala Ile Gln Ser Phe Asp Met Thr Ser Phe Asp Pro Lys
        195                     200                     205
Ile Gly Leu His Phe Ile Gly Asn Phe Leu Tyr Leu Phe Leu Ser Ser
    210                     215                     220
Thr Phe Leu Gly Val Gly Ile Gly Leu Leu Cys Ala Tyr Ile Ile Lys
225                     230                     235                     240
Lys Leu Tyr Phe Gly Arg His Ser Thr Asp Arg Glu Val Ala Leu Met
                245                     250                     255
Met Leu Met Ser Tyr Leu Ser Tyr Ile Met Ala Glu Leu Phe Tyr Leu
                260                     265                     270
Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser His Tyr
                275                     280                     285
Thr Trp His Asn Val Thr Glu Ser Ser Arg Val Thr Thr Arg His Ser
        290                     295                     300
Phe Ala Thr Leu Ser Phe Val Ala Glu Thr Phe Ile Phe Leu Tyr Val
305                     310                     315                     320
Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Lys Phe Val Lys Asn Ser
                325                     330                     335
Gln Gly Leu Ser Val Ala Val Ser Ser Ile Leu Val Gly Leu Ile Leu
                340                     345                     350
Val Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Ser Asn Leu
        355                     360                     365
Ala Lys Lys Asn Ser Ser Asp Lys Ile Ser Phe Arg Gln Gln Ile Ile
    370                     375                     380
Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Ile Ala Leu Ala
385                     390                     395                     400
Tyr Asn Lys Phe Thr Thr Ser Gly His Thr Ser Leu His Glu Asn Ala
                405                     410                     415
Ile Met Ile Thr Ser Thr Val Thr Val Val Leu Phe Ser Thr Val Val
                420                     425                     430
Phe Gly Leu Met Thr Lys Pro Leu Ile Asn Leu Leu Leu Pro Pro His
        435                     440                     445
Lys Gln Met Pro Ser Gly His Ser Ser Met Thr Thr Ser Glu Pro Ser
    450                     455                     460
Ser Pro Lys His Phe Thr Val Pro Leu Leu Asp Asn Gln Pro Asp Ser
465                     470                     475                     480
Glu Ser Asp Met Ile Thr Gly Pro Glu Val Ala Arg Pro Thr Ala Leu
                485                     490                     495
Arg Met Leu Leu Arg Thr Pro Thr His Thr Val His Arg Tyr Trp Arg
                500                     505                     510
Lys Phe Asp Asp Ser Phe Met Arg Pro Val Phe Gly Gly Arg Gly Phe
                515                     520                     525
Val Pro Phe Val Ala Gly Ser Pro Val Glu Gln Ser Pro Arg
        530                     535                     540
```

4

<210> 4
<211> 556
<212> PRT
<213> Suaeda maritima

<400> 4
Met Leu Ser Gln Leu Ser Ser Phe Phe Ala Ser Lys Met Asp Met Val
1   5   10   15
Ser Thr Ser Asp His Ala Ser Val Val Ser Met Asn Leu Phe Val Ala
            20   25   30
Leu Leu Arg Gly Cys Ile Val Ile Gly His Leu Leu Glu Glu Asn Arg
            35   40   45
Trp Met Asn Glu Ser Ile Thr Ala Leu Leu Ile Gly Leu Ser Thr Gly
    50   55   60
Ile Ile Ile Leu Leu Ile Ser Gly Gly Lys Ser Ser His Leu Leu Val
65   70   75   80
Phe Ser Glu Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe
            85   90   95
Asn Ala Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Ile
            100   105   110
Thr Ile Ile Leu Phe Gly Ala Val Gly Thr Leu Val Ser Phe Ile Ile
            115   120   125
Ile Ser Leu Gly Ser Ile Ala Ile Phe Gln Lys Met Asp Ile Gly Ser
            130   135   140
Leu Glu Leu Gly Asp Leu Leu Ala Ile Gly Ala Ile Phe Ala Ala Thr
145   150   155   160
Asp Ser Val Cys Thr Leu Gln Val Leu Asn Gln Asp Glu Thr Pro Leu
            165   170   175
Leu Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser
            180   185   190
Val Val Leu Phe Asn Ala Ile Gln Asn Phe Asp Leu Thr His Ile Asp
            195   200   205
His Arg Ile Ala Phe Gln Phe Gly Gly Asn Phe Leu Tyr Leu Phe Phe
            210   215   220
Ala Ser Thr Leu Leu Gly Ala Val Thr Gly Leu Leu Ser Ala Tyr Val
225   230   235   240
Ile Lys Lys Leu Tyr Phe Gly Arg His Ser Thr Asp Arg Glu Val Ala
                245   250   255
Leu Met Met Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Phe
            260   265   270
Tyr Leu Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser
            275   280   285
His Tyr Thr Trp His Asn Val Thr Glu Ser Ser Arg Val Thr Thr Lys
            290   295   300
His Ala Phe Ala Thr Leu Ser Phe Val Ala Glu Ile Phe Ile Phe Leu
305   310   315   320
Tyr Val Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Arg Phe Val Ser
            325   330   335
Asp Ser Pro Gly Thr Ser Val Ala Val Ser Ser Ile Leu Leu Gly Leu
            340   345   350
His Met Val Gly Arg Ala Ala Phe Val Phe Pro Phe Ala Phe Leu Met
            355   360   365
Asn Leu Ser Lys Lys Ser Asn Ser Glu Lys Val Thr Phe Asn Gln Gln
            370   375   380
Ile Val Ile Trp Trp Ala Gly Leu Met Lys Ser Ala Val Ser Val Ala
385   390   395   400
Leu Ala Tyr Asn Gln Phe Ser Arg Ser Gly His Thr Gln Leu Arg Gly

5

```
                    405                   410                   415
Asn Ala Ile Met Ile Thr Ser Thr Ile Thr Val Val Leu Phe Ser Thr
            420                   425                   430
Met Val Phe Gly Leu Leu Thr Lys Pro Leu Ile Leu Phe Met Leu Pro
            435                   440                   445
Gln Pro Lys His Phe Thr Ser Ala Ser Thr Val Ser Asp Leu Gly Ser
        450                   455                   460
Pro Lys Ser Phe Ser Leu Pro Leu Leu Glu Asp Arg Gln Asp Ser Glu
465                   470                   475                   480
Ala Asp Leu Gly Asn Asp Asp Glu Glu Ala Tyr Pro Arg Gly Thr Ile
                485                   490                   495
Ala Arg Pro Thr Ser Leu Arg Met Leu Leu Asn Ala Pro Thr His Thr
            500                   505                   510
Val His His Tyr Trp Arg Arg Phe Asp Asp Tyr Phe Met Arg Pro Val
            515                   520                   525
Phe Gly Gly Arg Gly Phe Val Pro Phe Val Pro Gly Ser Pro Thr Glu
        530                   535                   540
Gln Ser Ile Thr Asn Phe Val Thr Glu Asn Ile Ser
545                   550                   555
```

<210> 5
<211> 540
<212> PRT
<213> Petunia x hybrida

<400> 5
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Met Ala Phe Asp Phe Gly Thr Leu Leu Gly Asn Val Asp Arg Leu Ser
1               5                   10                  15
Thr Ser Asp His Gln Ser Val Val Ser Ile Asn Leu Phe Val Ala Leu
            20                  25                  30
Ile Cys Ala Cys Ile Val Ile Gly His Leu Leu Glu Glu Asn Arg Trp
        35                  40                  45
Met Asn Glu Ser Ile Thr Ala Leu Val Ile Gly Ser Cys Thr Gly Ile
        50                  55                  60
Val Ile Leu Leu Ile Ser Gly Gly Lys Asn Ser His Ile Leu Val Phe
65                  70                  75                  80
Ser Glu Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe Asn
                85                  90                  95
Ala Gly Phe Gln Val Lys Lys Lys Ser Phe Phe Arg Asn Phe Ser Thr
        100                 105                 110
Ile Met Leu Phe Gly Ala Leu Gly Thr Leu Ile Ser Phe Ile Ile Ile
        115                 120                 125
Ser Leu Gly Ala Ile Gly Ile Phe Lys Lys Met Asn Ile Gly Ser Leu
    130                 135                 140
Glu Ile Gly Asp Tyr Leu Ala Ile Gly Ala Ile Phe Ser Ala Thr Asp
145                 150                 155                 160
Ser Val Cys Thr Leu Gln Val Leu Asn Gln Asp Glu Thr Pro Leu Leu
            165                 170                 175
Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val
            180                 185                 190
Val Leu Phe Asn Ala Ile Gln Asn Phe Asp Leu Ser His Ile Asp Thr
        195                 200                 205
Gly Lys Ala Met Glu Leu Val Gly Asn Phe Leu Tyr Leu Phe Ala Ser
    210                 215                 220
Ser Thr Ala Leu Gly Val Ala Ala Gly Leu Leu Ser Ala Tyr Ile Ile
225                 230                 235                 240
```

6

Lys Lys Leu Tyr Phe Gly Arg His Ser Thr Asp Arg Glu Val Ala Ile
            245   250   255
Met Ile Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Phe Tyr
            260   265   270
Leu Ser Ala Ile Leu Thr Val Phe Phe Ser Gly Ile Val Met Ser His
            275   280   285
Tyr Thr Trp His Asn Val Thr Glu Ser Ser Arg Val Thr Thr Lys His
            290   295   300
Thr Phe Ala Thr Leu Ser Phe Ile Ala Glu Ile Phe Ile Phe Leu Tyr
305   310   315   320
Val Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Lys Phe Val Ser Asp
            325   330   335
Ser Pro Gly Ile Ser Val Gln Val Ser Ser Ile Leu Leu Gly Leu Val
            340   345   350
Leu Val Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Ser Asn
            355   360   365
Leu Thr Lys Lys Thr Pro Glu Ala Lys Ile Ser Phe Asn Gln Gln Val
            370   375   380
Thr Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Met Ala Leu
385   390   395   400
Ala Tyr Asn Gln Phe Thr Arg Gly Gly His Thr Gln Leu Arg Ala Asn
            405   410   415
Ala Ile Met Ile Thr Ser Thr Ile Thr Val Val Leu Phe Ser Thr Val
            420   425   430
Val Phe Gly Leu Met Thr Lys Pro Leu Ile Arg Ile Leu Leu Pro Ser
            435   440   445
His Lys His Leu Ser Arg Met Ile Ser Ser Glu Pro Thr Thr Pro Lys
            450   455   460
Ser Phe Ile Val Pro Leu Leu Asp Ser Thr Gln Asp Ser Glu Ala Asp
465   470   475   480
Leu Glu Arg His Val Pro Arg Pro His Ser Leu Arg Met Leu Leu Ser
            485   490   495
Thr Pro Ser His Thr Val His Tyr Tyr Trp Arg Lys Phe Asp Asn Ala
            500   505   510
Phe Met Arg Pro Val Phe Gly Gly Arg Gly Phe Val Pro Phe Ala Pro
            515   520   525
Gly Ser Pro Thr Asp Pro Val Gly Gly Asn Leu Gln
530   535   540

<210> 6
<211> 555
<212> PRT
<213> Torenia hybrida

<400> 6
Met Gly Phe Glu Ser Val Ile Lys Leu Ala Ala Ser Glu Thr Asp Asn
1   5   10   15
Leu Trp Ser Ser Gly His Gly Ser Val Val Ala Ile Thr Leu Phe Val
            20   25   30
Thr Leu Leu Cys Thr Cys Ile Val Ile Gly His Leu Leu Glu Glu Asn
            35   40   45
Arg Trp Met Asn Glu Ser Ile Ile Ala Leu Ile Ile Gly Leu Ala Thr
            50   55   60
Gly Val Ile Ile Leu Leu Ile Ser Gly Gly Lys Ser Ser His Leu Leu
65   70   75   80
Val Phe Ser Glu Asp Leu Phe Phe Ile Tyr Ala Leu Pro Pro Ile Ile

```
                  85                      90                      95
Phe Asn Ala Gly Phe Gln Val Lys Lys Lys Ser Phe Phe Arg Asn Phe
            100                     105                     110
Ala Thr Ile Met Met Phe Gly Ala Val Gly Thr Leu Ile Ser Phe Ile
        115                     120                     125
Ile Ile Ser Leu Gly Thr Ile Ala Phe Phe Pro Lys Met Asn Met Arg
    130                     135                     140
Leu Gly Val Gly Asp Tyr Leu Ala Ile Gly Ala Ile Phe Ala Ala Thr
145                     150                     155                     160
Asp Ser Val Cys Thr Leu Gln Val Leu Ser Gln Asp Glu Thr Pro Leu
                165                     170                     175
Leu Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser
            180                     185                     190
Val Val Leu Phe Asn Ala Val Gln Asn Phe Asp Leu Pro His Met Ser
        195                     200                     205
Thr Ala Lys Ala Phe Glu Leu Val Gly Asn Phe Phe Tyr Leu Phe Ala
    210                 .   215                     220
Thr Ser Thr Val Leu Gly Val Leu Thr Gly Leu Leu Ser Ala Tyr Ile
225                     230                     235                     240
Ile Lys Lys Leu Tyr Phe Gly Arg His Ser Thr Asp Arg Glu Val Ala
            245                     250                     255
Ile Met Ile Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Phe
            260                     265                     270
Asp Leu Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser
        275                     280                     285
His Tyr Thr Trp His Asn Val Thr Glu Asn Ser Arg Val Thr Thr Lys
    290                     295                     300
His Thr Phe Ala Thr Leu Ser Phe Val Ala Glu Ile Phe Ile Phe Leu
305                     310                     315                     320
Tyr Val Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Arg Phe Val Ser
            325                     330                     335
Gly Ser Met Thr Thr Ser Ala Ala Val Ser Ala Thr Leu Leu Gly Leu
            340                     345                     350
Val Leu Leu Ser Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Ser
        355                     360                     365
Asn Leu Ala Lys Lys Ser Pro Leu Glu Lys Ile Ser Leu Arg Gln Gln
    370                     375                     380
Ile Ile Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Met Ala
385         .           390                     395                     400
Leu Ala Tyr Lys Gln Phe Thr Arg Glu Gly Leu Thr Val Glu Arg Glu
            405                     410                     415
Asn Ala Ile Phe Ile Thr Ser Thr Ile Thr Ile Val Leu Phe Ser Thr
            420                     425                     430
Val Val Phe Gly Leu Met Thr Lys Pro Leu Ile Asn Leu Leu Ile Pro
        435                     440                     445
Ser Pro Lys Leu Asn Arg Ser Val Ser Ser Glu Pro Leu Thr Pro Asn
    450                     455                     460
Ser Ile Thr Ile Pro Leu Leu Gly Glu Ser Gln Asp Ser Val Ala Glu
465                     470                     475                     480
Leu Phe Ser Ile Arg Gly Gln Thr Ser Gln Gly Gly Glu Pro Val Ala
            485                     490                     495
Arg Pro Ser Ser Leu Arg Met Leu Leu Thr Lys Pro Thr His Thr Val
            500                     505                     510
His Tyr Tyr Trp Arg Lys Phe Asp Asn Ala Phe Met Arg Pro Val Phe
        515                     520                     525
Gly Gly Arg Gly Phe Val Pro Tyr Val Pro Gly Ser Pro Thr Glu Arg
    530                     535                     540
```

8

Ser Val Arg Asn Trp Glu Glu Glu Thr Lys Gln
545   550   555

<210> 7
<211> 542
<212> PRT
<213> Ipomoea tricolor

<400> 7
Met Ala Phe Gly Leu Ser Ser Leu Leu Gln Asn Ser Glu Leu Phe Thr
1   5   10   15
Ser Asp His Ala Ser Val Val Ser Met Asn Leu Phe Val Ala Leu Leu
            20   25   30
Cys Ala Cys Ile Val Leu Gly His Leu Leu Glu Glu Asn Arg Trp Val
            35   40   45
Asn Glu Ser Ile Thr Ala Leu Ile Ile Gly Leu Cys Thr Gly Val Val
    50   55   60
Ile Leu Leu Leu Ser Arg Gly Lys Ser Ser His Leu Leu Val Phe Ser
65   70   75   80
Glu Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe Asn Ala
            85   90   95
Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Val Asn Phe Met Thr Ile
            100   105   110
Met Leu Phe Gly Ala Ile Gly Thr Leu Ile Ser Cys Ser Ile Ile Ser
            115   120   125
Phe Gly Ala Val Lys Ile Phe Lys His Leu Asp Ile Asp Phe Leu Asp
            130   135   140
Phe Gly Asp Tyr Leu Ala Ile Gly Ala Ile Phe Ala Ala Thr Asp Ser
145   150   155   160
Val Cys Thr Leu Gln Val Leu Ser Gln Asp Glu Thr Pro Leu Leu Tyr
                165   170   175
Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val Val
                180   185   190
Leu Phe Asn Ala Ile Gln Ser Phe Asp Met Thr Ser Phe Asp Pro Lys
                195   200   205
Ile Gly Leu His Phe Ile Gly Asn Phe Leu Tyr Leu Phe Leu Ser Ser
    210   215   220
Thr Phe Leu Gly Val Gly Ile Gly Leu Leu Cys Ala Tyr Ile Ile Lys
225   230   235   240
Lys Leu Tyr Phe Gly Arg His Ser Thr Asp Arg Glu Val Ala Leu Met
                245   250   255
Met Leu Met Ser Tyr Leu Ser Tyr Ile Met Ala Glu Leu Phe Tyr Leu
                260   265   270
Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser His Tyr
    275   280   285
Thr Trp His Asn Val Thr Glu Ser Ser Arg Val Thr Thr Arg His Ser
    290   295   300
Phe Ala Thr Leu Ser Phe Val Ala Glu Thr Phe Ile Phe Leu Tyr Val
305   310   315   320
Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Lys Phe Val Lys Asn Ser
            325   330   335
Gln Gly Leu Ser Val Ala Val Ser Ser Ile Leu Val Gly Leu Ile Leu
            340   345   350
Val Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Ser Asn Leu
    355   360   365
Ala Lys Lys Asn Ser Ser Asp Lys Ile Ser Phe Arg Gln Gln Ile Ile

9

```
        370                     375                     380
Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Ile Ala Leu Ala
385                     390                     395                     400
Tyr Asn Lys Phe Thr Thr Ser Gly His Thr Ser Leu His Glu Asn Ala
                405                     410                     415
Ile Met Ile Thr Ser Thr Val Thr Val Val Leu Phe Ser Thr Val Val
                420                     425                     430
Phe Gly Leu Met Thr Lys Pro Leu Ile Asn Leu Leu Leu Pro Pro His
        435                     440                     445
Lys Gln Ile Ala Ser Gly His Ser Ser Met Thr Thr Ser Glu Pro Ser
        450                     455                     460
Ser Pro Lys His Phe Ala Val Pro Leu Leu Asp Asn Gln His Asp Ser
465                     470                     475                     480
Glu Ser Asp Met Ile Thr Gly Pro Glu Val Ala Arg Pro Thr Ala Leu
                485                     490                     495
Arg Met Leu Leu Arg Thr Pro Thr His Thr Val His Arg Tyr Trp Arg
                500                     505                     510
Lys Phe Asp Asp Ser Phe Met Arg Pro Val Phe Gly Gly Arg Gly Phe
        515                     520                     525
Val Pro Phe Val Ala Gly Ser Pro Ala Glu Gln Ser Pro Arg
        530                     535                     540


<210> 8
<211> 575
<212> PRT
<213> Arabidopsis thaliana

<400> 8
Met Ile Ser Pro Val Glu His Asp Pro Gln Gly Gln Val Lys Gln Gln
1               5                       10                      15
Gln Ala Ala Gly Val Gly Ile Leu Leu Gln Ile Met Met Leu Val Leu
                20                      25                      30
Ser Phe Val Leu Gly His Val Leu Arg Arg His Arg Phe His Tyr Leu
            35                      40                      45
Pro Glu Ala Ser Gly Ser Leu Leu Ile Gly Leu Ile Val Gly Ile Leu
        50                      55                      60
Ala Asn Ile Ser Asp Thr Glu Thr Ser Ile Arg Phe Cys Pro Pro Pro
65                      70                      75                      80
Ser Ile Pro Glu Phe Ser Leu Leu Ser Phe Pro Arg Ser Leu Val Cys
                85                      90                      95
Ser Phe Tyr Ser Val Ser Gly Arg Gly Leu Ile Ser Thr Lys Ser Ser
                100                     105                     110
Ser Ser Cys Phe Cys Cys Leu Pro Ser Tyr Tyr Ile Leu Cys Phe Asn
        115                     120                     125
Ile Cys Ile Ser Ser Phe Lys Phe Ala Ala Ala Met Leu Cys Ile Met
        130                     135                     140
Asp Val Ile Phe Leu Asp Ile Ile His Leu Phe Glu Pro Ser Gln Val
145                     150                     155                     160
Ser Val Phe Asn Leu Asn His Ser Phe Leu Thr Leu Glu Pro Leu Leu
                165                     170                     175
Pro Leu Leu Ser Ser Glu Leu Leu Ser Leu Gln Leu Leu Leu Val Val
                180                     185                     190
Cys Tyr Leu Gly Gly Ser Met Tyr Leu Met Tyr Lys Leu Pro Phe Val
        195                     200                     205
Glu Cys Leu Met Phe Gly Ala Leu Ile Ser Ala Thr Asp Pro Val Thr
        210                     215                     220
```

10

```
Val Leu Ser Ile Phe Gln Val Leu Leu Leu Phe Leu Leu Leu Ser Val
225                 230                 235                 240
Ser Thr Gly Tyr Lys Tyr Ser His Asp Val Gly Thr Asp Val Asn Leu
            245                 250                 255
Tyr Ala Leu Val Phe Gly Glu Ser Val Leu Asn Asp Ala Val Ser Phe
            260                 265                 270
Tyr Tyr Leu Leu Arg Tyr Trp Ala Leu Pro Phe Lys Thr Met Ser Leu
        275                 280                 285
Val Asn Arg Gln Ser Ser Ser Gly Glu His Phe Phe Met Val Val Ile
    290                 295                 300
Arg Phe Phe Glu Thr Phe Ala Gly Ser Met Ser Ala Gly Leu Ala Ile
305                 310                 315                 320
Ser Phe Leu Asn Ser Phe Tyr Thr Val Val Phe Thr Leu Leu Ile Leu
            325                 330                 335
Ser Glu His Ile Val Asn Val Met Ser Leu Phe Ser Leu Phe Ser Thr
            340                 345                 350
Ser Ile His Ala Cys Arg Arg Cys Trp Ser Leu Arg His Cys Phe Tyr
            355                 360                 365
Thr Leu His Arg Asn Cys Asn Arg Arg Val Met Lys Arg Tyr Thr Phe
            370                 375                 380
Ser Asn Leu Ser Glu Ala Ser Gln Ser Phe Val Ser Ser Phe Phe His
385                 390                 395                 400
Leu Ile Ser Ser Leu Ala Glu Thr Phe Thr Phe Ile Tyr Met Gly Phe
            405                 410                 415
Asp Ile Ala Met Glu Gln His Ser Trp Ser His Val Gly Ala Val Asn
            420                 425                 430
Val Phe Gly Cys Ala Tyr Leu Val Asn Leu Phe Arg Gln Glu Asn Gln
        435                 440                 445
Lys Ile Pro Met Lys His Gln Lys Ala Leu Trp Tyr Ser Gly Leu Arg
    450                 455                 460
Gly Ala Met Ala Phe Ala Leu Ala Leu Gln Ser Leu His Asp Leu Pro
465                 470                 475                 480
Glu Gly His Gly Gln Ile Ile Phe Thr Ala Thr Thr Thr Ile Val Val
            485                 490                 495
Val Thr Val Thr Phe Val Leu Leu Ile Gly Gly Ser Thr Gly Lys Met
            500                 505                 510
Leu Glu Ala Leu Glu Val Val Gly Asp Asp Leu Asp Asp Ser Met Ser
        515                 520                 525
Glu Val Asn Ser Arg Arg Ser Thr Leu Ile Ser Leu Asn Ile Gly Ala
    530                 535                 540
Ser Ser Asp Glu Asp Thr Ser Ser Ser Gly Ser Arg Phe Lys Met Lys
545                 550                 555                 560
Leu Lys Glu Phe His Lys Thr Gly Asp Gly Asp Gly Asp Gly Glu
            565                 570                 575
```

<210> 9
<211> 1146
<212> PRT
<213> Arabidopsis thaliana

<400> 9
```
Met Thr Thr Val Ile Asp Ala Thr Met Ala Tyr Arg Phe Leu Glu Glu
 1               5                   10                  15
Ala Thr Asp Ser Ser Ser Ser Ser Ser Ser Lys Leu Glu Ser Ser
            20                  25                  30
Pro Val Asp Ala Val Leu Phe Val Gly Met Ser Leu Val Leu Gly Ile
```

11

```
                 35                           40                           45
Ala Ser Arg His Leu Leu Arg Gly Thr Arg Val Pro Tyr Thr Val Ala
    50                           55                           60
Leu Leu Val Ile Gly Ile Ala Leu Gly Ser Leu Glu Tyr Gly Ala Lys
65                           70                           75                           80
His Asn Leu Gly Lys Ile Gly His Gly Ile Arg Ile Trp Asn Glu Ile
                 85                           90                           95
Asp Pro Glu Leu Leu Leu Ala Val Phe Leu Pro Ala Leu Leu Phe Glu
                 100                          105                          110
Ser Ser Phe Ser Met Glu Val His Gln Ile Lys Arg Cys Leu Gly Gln
                 115                          120                          125
Met Val Leu Leu Ala Val Pro Gly Val Leu Ile Ser Thr Ala Cys Leu
    130                          135                          140
Gly Ser Leu Val Lys Val Thr Phe Pro Tyr Glu Trp Asp Trp Lys Thr
145                          150                          155                          160
Ser Leu Leu Leu Gly Gly Leu Leu Ser Ala Thr Asp Pro Val Ala Val
                 165                          170                          175
Val Ala Leu Leu Lys Glu Leu Gly Ala Ser Lys Lys Leu Ser Thr Ile
                 180                          185                          190
Ile Glu Gly Glu Ser Leu Met Asn Asp Gly Thr Ala Ile Val Val Phe
                 195                          200                          205
Gln Leu Phe Leu Lys Met Ala Met Gly Gln Asn Ser Asp Trp Ser Ser
    210                          215                          220
Ile Ile Lys Phe Leu Leu Lys Val Ala Leu Gly Ala Val Gly Ile Gly
225                          230                          235                          240
Leu Ala Phe Gly Ile Ala Ser Val Ile Trp Leu Lys Phe Ile Phe Asn
                 245                          250                          255
Asp Thr Val Ile Glu Ile Thr Leu Thr Ile Ala Val Ser Tyr Phe Ala
                 260                          265                          270
Tyr Tyr Thr Ala Gln Glu Trp Ala Gly Ala Ser Gly Val Leu Thr Val
    275                          280                          285
Met Thr Leu Gly Met Phe Tyr Ala Ala Phe Ala Arg Thr Ala Phe Lys
    290                          295                          300
Gly Asp Ser Gln Lys Ser Leu His His Phe Trp Glu Met Val Ala Tyr
305                          310                          315                          320
Ile Ala Asn Thr Leu Ile Phe Ile Leu Ser Gly Val Val Ile Ala Glu
                 325                          330                          335
Gly Ile Leu Asp Ser Asp Lys Ile Ala Tyr Gln Gly Asn Ser Trp Arg
                 340                          345                          350
Phe Leu Phe Leu Leu Tyr Val Tyr Ile Gln Leu Ser Arg Val Val Val
                 355                          360                          365
Val Gly Val Leu Tyr Pro Leu Leu Cys Arg Phe Gly Tyr Gly Leu Asp
    370                          375                          380
Trp Lys Glu Ser Ile Ile Leu Val Trp Ser Gly Leu Arg Gly Ala Val
385                          390                          395                          400
Ala Leu Ala Leu Ser Leu Ser Val Lys Gln Ser Ser Gly Asn Ser His
                 405                          410                          415
Ile Ser Lys Glu Thr Gly Thr Leu Phe Leu Phe Phe Thr Gly Gly Ile
                 420                          425                          430
Val Phe Leu Thr Leu Ile Val Asn Gly Ser Thr Thr Gln Phe Val Leu
    435                          440                          445
Arg Leu Leu Arg Met Asp Ile Leu Pro Ala Pro Lys Lys Arg Ile Leu
    450                          455                          460
Glu Tyr Thr Lys Tyr Glu Met Leu Asn Lys Ala Leu Arg Ala Phe Gln
465                          470                          475                          480
Asp Leu Gly Asp Asp Glu Glu Leu Gly Pro Ala Asp Trp Pro Thr Val
                 485                          490                          495
```

12

```
Glu Ser Tyr Ile Ser Ser Leu Lys Gly Ser Glu Gly Glu Leu Val His
            500                 505             510
His Pro His Asn Gly Ser Lys Ile Gly Ser Leu Asp Pro Lys Ser Leu
            515             520             525
Lys Asp Ile Arg Met Arg Phe Leu Asn Gly Val Gln Ala Thr Tyr Trp
    530             535             540
Glu Met Leu Asp Glu Gly Arg Ile Ser Glu Val Thr Ala Asn Ile Leu
545             550             555                 560
Met Gln Ser Val Asp Glu Ala Leu Asp Gln Val Ser Thr Thr Leu Cys
                565             570             575
Asp Trp Arg Gly Leu Lys Pro His Val Asn Phe Pro Asn Tyr Tyr Asn
            580             585             590
Phe Leu His Ser Lys Val Val Pro Arg Lys Leu Val Thr Tyr Phe Ala
            595             600             605
Val Glu Arg Leu Glu Ser Ala Cys Tyr Ile Ser Ala Ala Phe Leu Arg
    610             615             620
Ala His Thr Ile Ala Arg Gln Gln Leu Tyr Asp Phe Leu Gly Glu Ser
625                 630             635                 640
Asn Ile Gly Ser Ile Val Ile Asn Glu Ser Glu Lys Glu Gly Glu Glu
                645             650             655
Ala Lys Lys Phe Leu Glu Lys Val Arg Ser Ser Phe Pro Gln Val Leu
            660             665             670
Arg Val Val Lys Thr Lys Gln Val Thr Tyr Ser Val Leu Asn His Leu
            675             680             685
Leu Gly Tyr Ile Glu Asn Leu Glu Lys Val Gly Leu Leu Glu Glu Lys
            690             695             700
Glu Ile Ala His Leu His Asp Ala Val Gln Thr Gly Leu Lys Lys Leu
705                 710             715                 720
Leu Arg Asn Pro Pro Ile Val Lys Leu Pro Lys Leu Ser Asp Met Ile
            725             730             735
Thr Ser His Pro Leu Ser Val Ala Leu Pro Pro Ala Phe Cys Glu Pro
            740             745             750
Leu Lys His Ser Lys Lys Glu Pro Met Lys Leu Arg Gly Val Thr Leu
            755             760             765
Tyr Lys Glu Gly Ser Lys Pro Thr Gly Val Trp Leu Ile Phe Asp Gly
    770             775             780
Ile Val Lys Trp Lys Ser Lys Ile Leu Ser Asn Asn His Ser Leu His
785             790             795                 800
Pro Thr Phe Ser His Gly Ser Thr Leu Gly Leu Tyr Glu Val Leu Thr
            805             810             815
Gly Lys Pro Tyr Leu Cys Asp Leu Ile Thr Asp Ser Met Val Leu Cys
            820             825             830
Phe Phe Ile Asp Ser Glu Lys Ile Leu Ser Leu Gln Ser Asp Ser Thr
            835             840             845
Ile Asp Asp Phe Leu Trp Gln Glu Ser Ala Leu Val Leu Leu Lys Leu
    850             855             860
Leu Arg Pro Gln Ile Phe Glu Ser Val Ala Met Gln Glu Leu Arg Ala
865             870             875                 880
Leu Val Ser Thr Glu Ser Ser Lys Leu Thr Thr Tyr Val Thr Gly Glu
            885             890             895
Ser Ile Glu Ile Asp Cys Asn Ser Ile Gly Leu Leu Leu Glu Gly Phe
            900             905             910
Val Lys Pro Val Gly Ile Lys Glu Glu Leu Ile Ser Ser Pro Ala Ala
            915             920             925
Leu Ser Pro Ser Asn Gly Asn Gln Ser Phe His Asn Ser Ser Glu Ala
            930             935             940
Ser Gly Ile Met Arg Val Ser Phe Ser Gln Gln Ala Thr Gln Tyr Ile
```

13

```
945                     950                     955                     960
Val Glu Thr Arg Ala Arg Ala Ile Ile Phe Asn Ile Gly Ala Phe Gly
                965                     970                     975
Ala Asp Arg Thr Leu His Arg Arg Pro Ser Ser Leu Thr Pro Pro Arg
                980                     985                     990
Ser Ser Ser Ser Asp Gln Leu Gln Arg Ser Phe Arg Lys Glu His Arg
                995                    1000                    1005
Gly Leu Met Ser Trp Pro Glu Asn Ile Tyr Ala Lys Gln Gln Gln Glu
       1010                    1015                    1020
Ile Asn Lys Thr Thr Leu Ser Leu Ser Glu Arg Ala Met Gln Leu Ser
1025                    1030                    1035                    1040
Ile Phe Gly Ser Met Val Asn Val Tyr Arg Arg Ser Val Ser Phe Gly
                1045                    1050                    1055
Gly Ile Tyr Asn Asn Lys Leu Gln Asp Asn Leu Leu Tyr Lys Lys Leu
                1060                    1065                    1070
Pro Leu Asn Pro Ala Gln Gly Leu Val Ser Ala Lys Ser Glu Ser Ser
                1075                    1080                    1085
Ile Val Thr Lys Lys Gln Leu Glu Thr Arg Lys His Ala Cys Gln Leu
                1090                    1095                    1100
Pro Leu Lys Gly Glu Ser Ser Thr Arg Gln Asn Thr Met Val Glu Ser
1105                    1110                    1115                    1120
Ser Asp Glu Glu Asp Glu Asp Glu Gly Ile Val Val Arg Ile Asp Ser
                1125                    1130                    1135
Pro Ser Lys Ile Val Phe Arg Asn Asp Leu
                1140                    1145


<210> 10
<211> 555
<212> PRT
<213> Atriplex gmelini

<400> 10
Met Trp Ser Gln Leu Ser Ser Leu Leu Ser Gly Lys Met Asp Ala Leu
 1               5                    10                      15
Thr Thr Ser Asp His Ala Ser Val Val Ser Met Asn Leu Phe Val Ala
                20                  25                      30
Leu Leu Cys Gly Cys Ile Val Ile Gly His Leu Leu Glu Glu Asn Arg
        35                    40                      45
Trp Met Asn Glu Ser Ile Thr Ala Leu Leu Ile Gly Leu Ala Thr Gly
    50                    55                      60
Val Val Ile Leu Leu Ile Ser Gly Gly Lys Ser Ser His Leu Leu Val
65                    70                      75                      80
Phe Ser Glu Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe
                85                    90                      95
Asn Ala Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Ile
                100                   105                     110
Thr Ile Val Leu Phe Gly Ala Val Gly Thr Leu Val Ser Phe Thr Ile
        115                   120                     125
Ile Ser Leu Gly Ala Leu Ser Ile Phe Lys Lys Leu Asp Ile Gly Thr
        130                   135                     140
Leu Glu Leu Ala Asp Tyr Leu Ala Ile Gly Ala Ile Phe Ala Ala Thr
145                   150                     155                     160
Asp Ser Val Cys Thr Leu Gln Val Leu Asn Gln Asp Glu Thr Pro Leu
                165                   170                     175
Leu Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser
                180                   185                     190
```

14

```
Val Val Leu Phe Asn Ala Ile Gln Ser Phe Asp Leu Thr Arg Ile Asp
        195                 200                 205
His Arg Ile Ala Leu Gln Phe Met Gly Asn Phe Leu Tyr Leu Phe Ile
    210                 215                 220
Ala Ser Thr Ile Leu Gly Ala Phe Thr Gly Leu Leu Ser Ala Tyr Ile
225                 230                 235                 240
Ile Lys Lys Leu Tyr Phe Gly Arg His Ser Thr Asp Arg Glu Val Ala
            245                 250                 255
Leu Met Met Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Phe
            260                 265                 270
Tyr Leu Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser
        275                 280                 285
His Tyr Thr Trp His Asn Val Thr Glu Ser Ser Arg Val Thr Thr Lys
    290                 295                 300
His Ala Phe Ala Thr Leu Ser Phe Val Ala Glu Val Phe Leu Phe Leu
305                 310                 315                 320
Tyr Val Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Arg Phe Val Ser
            325                 330                 335
Asp Ser Pro Gly Ile Ser Val Ala Val Ser Ser Ile Leu Leu Gly Leu
            340                 345                 350
Val Met Val Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Trp Leu Met
        355                 360                 365
Asn Phe Ala Lys Lys Ser Gln Ser Glu Lys Val Thr Phe Asn Gln Gln
    370                 375                 380
Ile Val Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Met Ala
385                 390                 395                 400
Leu Ala Tyr Asn Gln Phe Thr Arg Ser Gly His Thr Gln Leu Arg Gly
            405                 410                 415
Asn Ala Ile Met Ile Thr Ser Thr Ile Ser Val Val Leu Phe Ser Thr
            420                 425                 430
Met Val Phe Gly Leu Leu Thr Lys Pro Leu Ile Met Phe Leu Leu Pro
        435                 440                 445
Gln Pro Lys His Phe Thr Ser Cys Ser Thr Val Ser Asp Val Gly Ser
    450                 455                 460
Pro Lys Ser Tyr Ser Leu Pro Leu Leu Glu Gly Asn Gln Asp Tyr Glu
465                 470                 475                 480
Val Asp Val Gly Asn Gly Asn His Glu Asp Thr Thr Glu Pro Arg Thr
            485                 490                 495
Ile Val Arg Pro Ser Ser Leu Arg Met Leu Leu Asn Ala Pro Thr His
            500                 505                 510
Thr Val His His Tyr Trp Arg Lys Phe Asp Asp Ser Phe Met Arg Pro
    515                 520                 525
Val Phe Gly Gly Arg Gly Phe Val Pro Phe Val Pro Gly Ser Pro Thr
    530                 535                 540
Glu Gln Ser Thr Asn Asn Leu Val Asp Arg Thr
545                 550                 555


<210> 11
<211> 985
<212> PRT
<213> Saccharomyces cerevisiae

<400> 11
Met Ala Ile Trp Glu Gln Leu Glu Val Ser Lys Ala His Val Ala Tyr
 1               5                   10                  15
Ala Cys Val Gly Val Phe Ser Ser Ile Phe Ser Leu Val Ser Leu Tyr
```

15

```
                20                      25                      30
Val Lys Glu Lys Leu Tyr Ile Gly Glu Ser Thr Val Ala Gly Ile Phe
     35                      40                      45
Gly Leu Ile Val Gly Pro Val Cys Leu Asn Trp Phe Asn Pro Leu Lys
     50                      55                      60
Trp Gly Asn Ser Asp Ser Ile Thr Leu Glu Ile Thr Arg Ile Val Leu
65                      70                      75                      80
Cys Leu Gln Ile Phe Ala Val Ala Val Glu Leu Pro Arg Lys Tyr Met
                85                      90                      95
Leu Lys His Trp Val Ser Val Thr Met Leu Leu Leu Pro Val Met Thr
                100                     105                     110
Ala Gly Trp Leu Ile Ile Gly Leu Phe Val Trp Ile Leu Ile Pro Gly
                115                     120                     125
Leu Asn Phe Ser Ala Ser Leu Leu Ile Ser Ala Cys Ile Thr Ala Thr
     130                     135                     140
Asp Pro Ile Leu Ala Gln Ser Val Val Ser Gly Lys Phe Ala Gln Arg
145                     150                     155                     160
Val Pro Gly His Leu Arg Asn Leu Leu Ser Ala Glu Ser Gly Cys Asn
                165                     170                     175
Asp Gly Met Ala Phe Pro Phe Leu Phe Leu Ser Met Asn Leu Ile Leu
                180                     185                     190
His Pro Gly Asn Gly Arg Glu Ile Val Lys Asp Trp Ile Cys Val Thr
                195                     200                     205
Ile Leu Tyr Glu Cys Leu Phe Gly Cys Leu Leu Gly Cys Phe Ile Gly
     210                     215                     220
Tyr Val Gly Arg Ile Thr Ile Arg Phe Ala Glu Lys Lys Asn Ile Ile
225                     230                     235                     240
Asp Arg Glu Ser Phe Leu Ala Phe Tyr Val Val Leu Ala Phe Met Cys
                245                     250                     255
Ala Gly Phe Gly Ser Ile Leu Gly Val Asp Asp Leu Leu Val Ser Phe
                260                     265                     270
Ala Ala Gly Ala Thr Phe Ala Trp Asp Gly Trp Phe Ser Gln Lys Thr
                275                     280                     285
Gln Glu Ser Asn Val Ser Thr Val Ile Asp Leu Leu Leu Asn Tyr Ala
     290                     295                     300
Tyr Phe Ile Tyr Phe Gly Ala Ile Ile Pro Trp Ser Gln Phe Asn Asn
305                     310                     315                     320
Gly Glu Ile Gly Thr Asn Val Trp Arg Leu Ile Ile Leu Ser Ile Val
                325                     330                     335
Val Ile Phe Leu Arg Arg Ile Pro Ala Val Met Ile Leu Arg Pro Leu
                340                     345                     350
Ile Pro Asp Ile Lys Ser Trp Arg Glu Ala Leu Phe Val Gly His Phe
                355                     360                     365
Gly Pro Ile Gly Val Gly Ala Ile Phe Ala Ala Ile Leu Ala Arg Gly
     370                     375                     380
Glu Leu Glu Ser Thr Phe Ser Asp Glu Pro Thr Pro Leu Asn Val Val
385                     390                     395                     400
Pro Ser Lys Glu Glu Ser Lys His Trp Gln Leu Ile Ala Cys Ile Trp
                405                     410                     415
Pro Ile Thr Cys Phe Phe Ile Val Thr Ser Ile Ile Val His Gly Ser
                420                     425                     430
Ser Val Ala Ile Ile Thr Leu Gly Arg His Leu Asn Thr Ile Thr Leu
     435                     440                     445
Thr Lys Thr Phe Thr Thr His Thr Thr Asn Gly Asp Asn Gly Lys Ser
     450                     455                     460
Ser Trp Met Gln Arg Leu Pro Ser Leu Asp Lys Ala Gly Arg Ser Phe
465                     470                     475                     480
```

16

```
Ser Leu His Arg Met Asp Thr Gln Met Thr Leu Ser Gly Asp Glu Gly
            485                     490                     495
Glu Ala Glu Glu Gly Gly Gly Arg Lys Gly Leu Ala Gly Gly Glu Asp
            500                     505                     510
Glu Glu Gly Leu Asn Asn Asp Gln Ile Gly Ser Val Ala Thr Ser Gly
            515                     520                     525
Ile Pro Ala Arg Pro Ala Gly Gly Met Pro Arg Arg Arg Lys Leu Ser
            530                     535                     540
Arg Lys Glu Lys Arg Leu Asn Arg Arg Gln Lys Leu Arg Asn Lys Gly
545                     550                     555                     560
Arg Glu Ile Phe Ser Ser Arg Ser Lys Asn Glu Met Tyr Asp Asp Asp
            565                     570                     575
Glu Leu Asn Asp Leu Gly Arg Glu Arg Leu Gln Lys Glu Lys Glu Ala
            580                     585                     590
Arg Ala Ala Thr Phe Ala Leu Ser Thr Ala Val Asn Thr Gln Arg Asn
            595                     600                     605
Glu Glu Ile Gly Met Gly Gly Asp Glu Glu Glu Asp Glu Tyr Thr Pro
            610                     615                     620
Glu Lys Glu Tyr Ser Asp Asn Tyr Asn Asn Thr Pro Ser Phe Glu Ser
625                     630                     635                     640
Ser Glu Arg Ser Ser Ser Leu Arg Gly Arg Thr Tyr Val Pro Arg Asn
            645                     650                     655
Arg Tyr Asp Gly Glu Glu Thr Glu Ser Glu Ile Glu Ser Glu Asp Glu
            660                     665                     670
Met Glu Asn Glu Ser Glu Arg Ser Met Ala Ser Ser Glu Glu Arg Arg
            675                     680                     685
Ile Arg Lys Met Lys Glu Glu Glu Met Lys Pro Gly Thr Ala Tyr Leu
            690                     695                     700
Asp Gly Asn Arg Met Ile Ile Glu Asn Lys Gln Gly Glu Ile Leu Asn
705                     710                     715                     720
Gln Val Asp Ile Glu Asp Arg Asn Glu Ala Arg Asp Asp Glu Val Ser
            725                     730                     735
Val Asp Ser Thr Ala His Ser Ser Leu Thr Thr Thr Met Thr Asn Leu
            740                     745                     750
Ser Ser Ser Ser Gly Gly Arg Leu Lys Arg Ile Leu Thr Pro Thr Ser
            755                     760                     765
Leu Gly Lys Ile His Ser Leu Val Asp Lys Gly Lys Asp Lys Asn Lys
            770                     775                     780
Asn Ser Lys Tyr His Ala Phe Lys Ile Asp Asn Leu Leu Ile Ile Glu
785                     790                     795                     800
Asn Glu Asp Gly Asp Val Ile Lys Arg Tyr Lys Ile Asn Pro His Lys
            805                     810                     815
Ser Asp Asp Asp Lys Ser Lys Asn Arg Pro Arg Asn Asp Ser Val Val
            820                     825                     830
Ser Arg Ala Leu Thr Ala Val Gly Leu Lys Ser Lys Ala Asn Ser Gly
            835                     840                     845
Val Pro Pro Pro Val Asp Glu Glu Lys Ala Ile Glu Gly Pro Ser Arg
            850                     855                     860
Lys Gly Pro Gly Met Leu Lys Lys Arg Thr Leu Thr Pro Ala Pro Pro
865                     870                     875                     880
Arg Gly Val Gln Asp Ser Leu Asp Leu Glu Asp Glu Pro Ser Ser Glu
            885                     890                     895
Glu Asp Leu Gly Asp Ser Tyr Asn Met Asp Asp Ser Glu Asp Tyr Asp
            900                     905                     910
Asp Asn Ala Tyr Glu Ser Glu Thr Glu Phe Glu Arg Gln Arg Arg Leu
            915                     920                     925
Asn Ala Leu Gly Glu Met Thr Ala Pro Ala Asp Gln Asp Asp Glu Glu
```

17

```
                930                     935                      940
Leu Pro Pro Leu Pro Val Glu Ala Gln Thr Gly Asn Asp Gly Pro Gly
945                     950                      955                      960
Thr Ala Glu Gly Lys Lys Lys Gln Lys Ser Ala Ala Val Lys Ser Ala
                965                     970                      975
Leu Ser Lys Thr Leu Gly Leu Asn Lys
                980                     985


<210> 12
<211> 633
<212> PRT
<213> Saccharomyces cerevisiae

<400> 12
Met Leu Ser Lys Val Leu Leu Asn Ile Ala Phe Lys Val Leu Leu Thr
 1               5                      10                      15
Thr Ala Lys Arg Ala Val Asp Pro Asp Asp Asp Glu Leu Leu Pro
                20                      25                      30
Ser Pro Asp Leu Pro Gly Ser Asp Asp Pro Ile Ala Gly Asp Pro Asp
                35                      40                      45
Val Asp Leu Asn Pro Val Thr Glu Glu Met Phe Ser Ser Trp Ala Leu
                50                      55                      60
Phe Ile Met Leu Leu Leu Leu Ile Ser Ala Leu Trp Ser Ser Tyr Tyr
65                      70                      75                      80
Leu Thr Gln Lys Arg Ile Arg Ala Val His Glu Thr Val Leu Ser Ile
                85                      90                      95
Phe Tyr Gly Met Val Ile Gly Leu Ile Ile Arg Met Ser Pro Gly His
                100                     105                     110
Tyr Ile Gln Asp Thr Val Thr Phe Asn Ser Ser Tyr Phe Phe Asn Val
                115                     120                     125
Leu Leu Pro Pro Ile Ile Leu Asn Ser Gly Tyr Glu Leu Asn Gln Val
                130                     135                     140
Asn Phe Phe Asn Asn Met Leu Ser Ile Leu Ile Phe Ala Ile Pro Gly
145                     150                     155                     160
Thr Phe Ile Ser Ala Val Val Ile Gly Ile Ile Leu Tyr Ile Trp Thr
                165                     170                     175
Phe Leu Gly Leu Glu Ser Ile Asp Ile Ser Phe Ala Asp Ala Met Ser
                180                     185                     190
Val Gly Ala Thr Leu Ser Ala Thr Asp Pro Val Thr Ile Leu Ser Ile
                195                     200                     205
Phe Asn Ala Tyr Lys Val Asp Pro Lys Leu Tyr Thr Ile Ile Phe Gly
                210                     215                     220
Glu Ser Leu Leu Asn Asp Ala Ile Ser Ile Val Met Phe Glu Thr Cys
225                     230                     235                     240
Gln Lys Phe His Gly Gln Pro Ala Thr Phe Ser Ser Val Phe Glu Gly
                245                     250                     255
Ala Gly Leu Phe Leu Met Thr Phe Ser Val Ser Leu Leu Ile Gly Val
                260                     265                     270
Leu Ile Gly Ile Leu Val Ala Leu Leu Leu Lys His Thr His Ile Arg
                275                     280                     285
Arg Tyr Pro Gln Ile Glu Ser Cys Leu Ile Leu Leu Ile Ala Tyr Glu
                290                     295                     300
Ser Tyr Phe Phe Ser Asn Gly Cys His Met Ser Gly Ile Val Ser Leu
305                     310                     315                     320
Leu Phe Cys Gly Ile Thr Leu Lys His Tyr Ala Tyr Tyr Asn Met Ser
                325                     330                     335
```

18

```
Arg Arg Ser Gln Ile Thr Ile Lys Tyr Ile Phe Gln Leu Leu Ala Arg
            340                 345                 350
Leu Ser Glu Asn Phe Ile Phe Ile Tyr Leu Gly Leu Glu Leu Phe Thr
            355                 360                 365
Glu Val Glu Leu Val Tyr Lys Pro Leu Leu Ile Ile Val Ala Ala Ile
            370                 375                 380
Ser Ile Cys Val Ala Arg Trp Cys Ala Val Phe Pro Leu Ser Gln Phe
385                     390                 395                 400
Val Asn Trp Ile Tyr Arg Val Lys Thr Ile Arg Ser Met Ser Gly Ile
                    405                 410                 415
Thr Gly Glu Asn Ile Ser Val Pro Asp Glu Ile Pro Tyr Asn Tyr Gln
            420                 425                 430
Met Met Thr Phe Trp Ala Gly Leu Arg Gly Ala Val Gly Val Ala Leu
            435                 440                 445
Ala Leu Gly Ile Gln Gly Glu Tyr Lys Phe Thr Leu Leu Ala Thr Val
            450                 455                 460
Leu Val Val Val Val Leu Thr Val Ile Ile Phe Gly Gly Thr Thr Ala
465                     470                 475                 480
Gly Met Leu Glu Val Leu Asn Ile Lys Thr Gly Cys Ile Ser Glu Glu
                    485                 490                 495
Asp Thr Ser Asp Asp Glu Phe Asp Ile Glu Ala Pro Arg Ala Ile Asn
            500                 505                 510
Leu Leu Asn Gly Ser Ser Ile Gln Thr Asp Leu Gly Pro Tyr Ser Asp
            515                 520                 525
Asn Asn Ser Pro Asp Ile Ser Ile Asp Gln Phe Ala Val Ser Ser Asn
            530                 535                 540
Lys Asn Leu Pro Asn Asn Ile Ser Thr Thr Gly Gly Asn Thr Phe Gly
545                     550                 555                 560
Gly Leu Asn Glu Thr Glu Asn Thr Ser Pro Asn Pro Ala Arg Ser Ser
                    565                 570                 575
Met Asp Lys Arg Asn Leu Arg Asp Lys Leu Gly Thr Ile Phe Asn Ser
            580                 585                 590
Asp Ser Gln Trp Phe Gln Asn Phe Asp Glu Gln Val Leu Lys Pro Val
            595                 600                 605
Phe Leu Asp Asn Val Ser Pro Ser Leu Gln Asp Ser Ala Thr Gln Ser
            610                 615                 620
Pro Ala Asp Phe Ser Ser Gln Asn His
625                 630
```

<210> 13
<211> 546
<212> PRT
<213> Arabidopsis thaliana

<400> 13
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Met Thr Met Phe Ala Ser Leu Thr Ser Lys Met Leu Ser Val Ser Thr
1               5                   10                  15
Ser Asp His Ala Ser Val Val Ser Leu Asn Leu Phe Val Ala Leu Leu
            20                  25                  30
Cys Ala Cys Ile Val Ile Gly His Leu Leu Glu Glu Asn Arg Trp Met
            35                  40                  45
Asn Glu Ser Ile Thr Ala Leu Leu Ile Gly Leu Gly Thr Gly Val Val
            50                  55                  60
Ile Leu Leu Ile Ser Arg Gly Lys Asn Ser His Leu Leu Val Phe Ser
65                  70                  75                  80
Glu Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe Asn Ala
```

```
                    85                    90                    95
Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Val Thr Ile
                100                   105                   110
Met Ala Phe Gly Ala Ile Gly Thr Val Val Ser Cys Thr Ile Ile Ser
                115                   120                   125
Leu Gly Ala Ile Gln Phe Phe Lys Lys Leu Asp Ile Gly Thr Phe Asp
            130                   135                   140
Leu Gly Asp Phe Leu Ala Ile Gly Ala Ile Phe Ala Ala Thr Asp Ser
145                   150                   155                   160
Val Cys Thr Leu Gln Val Leu Asn Gln Asp Glu Thr Pro Leu Leu Tyr
                165                   170                   175
Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val Val
                180                   185                   190
Leu Phe Asn Ala Ile Gln Ser Phe Asp Leu Thr His Leu Asn His Glu
                195                   200                   205
Ala Ala Phe Gln Phe Leu Gly Asn Phe Phe Tyr Leu Phe Leu Leu Ser
                210                   215                   220
Thr Gly Leu Gly Val Ala Thr Gly Leu Ile Ser Ala Tyr Val Ile Lys
225                   230                   235                   240
Lys Leu Tyr Phe Gly Arg His Ser Thr Asp Arg Glu Val Ala Leu Met
                245                   250                   255
Met Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Phe Ala Leu
                260                   265                   270
Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser His Tyr
                275                   280                   285
Thr Trp His Asn Val Thr Glu Ser Ser Arg Ile Thr Thr Lys His Ala
            290                   295                   300
Phe Ala Thr Leu Ser Phe Leu Ala Glu Thr Phe Ile Phe Leu Tyr Val
305                   310                   315                   320
Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Arg Phe Val Ser Asp Ser
                325                   330                   335
Pro Gly Thr Ser Val Ala Val Ser Ser Ile Leu Met Gly Leu Val Met
                340                   345                   350
Leu Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Ser Asn Leu
                355                   360                   365
Ala Lys Lys His Gln Ser Glu Lys Ile Ser Ile Lys Gln Gln Val Val
            370                   375                   380
Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Met Ala Leu Ala
385                   390                   395                   400
Tyr Asn Lys Phe Thr Arg Ser Gly His Thr Glu Leu Arg Gly Asn Ala
                405                   410                   415
Ile Met Ile Thr Ser Thr Ile Thr Val Cys Leu Phe Ser Thr Met Val
                420                   425                   430
Phe Gly Met Leu Thr Lys Pro Leu Ile Arg Tyr Leu Met Pro His Gln
            435                   440                   445
Lys Ala Thr Thr Ser Thr Thr Ser Met Leu Ser Asp Asp Ser Thr Pro
            450                   455                   460
Lys Ser Ile His Ile Pro Leu Leu Asp Gly Glu Gln Leu Asp Ser Phe
465                   470                   475                   480
Glu Leu Pro Gly Ser His Gln Asp Val Pro Arg Pro Asn Ser Leu Arg
                485                   490                   495
Gly Phe Leu Met Arg Pro Thr Arg Thr Val His Tyr Tyr Trp Arg Gln
            500                   505                   510
Phe Asp Asp Ala Phe Met Arg Pro Val Phe Gly Gly Arg Gly Phe Val
            515                   520                   525
Pro Phe Val Pro Gly Ser Pro Thr Glu Arg Ser Ser His Asp Leu Ser
            530                   535                   540
```

20

Lys Pro
545

<210> 14
<211> 529
<212> PRT
<213> Arabidopsis thaliana

<400> 14
Met Ser Ile Gly Leu Thr Glu Phe Val Thr Asn Lys Leu Ala Ala Glu
1   5   10   15
His Pro Gln Val Ile Pro Ile Ser Val Phe Ile Ala Ile Leu Cys Leu
            20   25   30
Cys Leu Val Ile Gly His Leu Leu Glu Glu Asn Arg Trp Val Asn Glu
        35   40   45
Ser Ile Thr Ala Ile Leu Val Gly Ala Ala Ser Gly Thr Val Ile Leu
    50   55   60
Leu Ile Ser Lys Gly Lys Ser Ser His Ile Leu Val Phe Asp Glu Glu
65   70   75   80
Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe Asn Ala Gly Phe
                85   90   95
Gln Val Lys Lys Lys Lys Phe Phe His Asn Phe Leu Thr Ile Met Ser
            100   105   110
Phe Gly Val Ile Gly Val Phe Ile Ser Thr Val Ile Ile Ser Phe Gly
        115   120   125
Thr Trp Trp Leu Phe Pro Lys Leu Gly Phe Lys Gly Leu Ser Ala Arg
    130   135   140
Asp Tyr Leu Ala Ile Gly Thr Ile Phe Ser Ser Thr Asp Thr Val Cys
145   150   155   160
Thr Leu Gln Ile Leu His Gln Asp Glu Thr Pro Leu Leu Tyr Ser Leu
                165   170   175
Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val Val Leu Phe
            180   185   190
Asn Ala Val Gln Lys Ile Gln Phe Glu Ser Leu Thr Gly Trp Thr Ala
        195   200   205
Leu Gln Val Phe Gly Asn Phe Leu Tyr Leu Phe Ser Thr Ser Thr Leu
    210   215   220
Leu Gly Ile Gly Val Gly Leu Ile Thr Ser Phe Val Leu Lys Thr Leu
225   230   235   240
Tyr Phe Gly Arg His Ser Thr Thr Arg Glu Leu Ala Ile Met Val Leu
                245   250   255
Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Phe Ser Leu Ser Gly
        260   265   270
Ile Leu Thr Val Phe Phe Cys Gly Val Leu Met Ser His Tyr Ala Ser
        275   280   285
Tyr Asn Val Thr Glu Ser Ser Arg Ile Thr Ser Arg His Val Phe Ala
        290   295   300
Met Leu Ser Phe Ile Ala Glu Thr Phe Ile Phe Leu Tyr Val Gly Thr
305   310   315   320
Asp Ala Leu Asp Phe Thr Lys Trp Lys Thr Ser Ser Leu Ser Phe Gly
            325   330   335
Gly Thr Leu Gly Val Ser Gly Val Ile Thr Ala Leu Val Leu Leu Gly
        340   345   350
Arg Ala Ala Phe Val Phe Pro Leu Ser Val Leu Thr Asn Phe Met Asn
    355   360   365
Arg His Thr Glu Arg Asn Glu Ser Ile Thr Phe Lys His Gln Val Ile

21

```
              370                      375                      380
Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Ile Ala Leu Ala
385                      390                      395                      400
Phe Lys Gln Phe Thr Tyr Ser Gly Val Thr Leu Asp Pro Val Asn Ala
                    405                      410                      415
Ala Met Val Thr Asn Thr Thr Ile Val Val Leu Phe Thr Thr Leu Val
                    420                      425                      430
Phe Gly Phe Leu Thr Lys Pro Leu Val Asn Tyr Leu Leu Pro Gln Asp
                    435                      440                      445
Ala Ser His Asn Thr Gly Asn Arg Gly Lys Arg Thr Glu Pro Gly Ser
                    450                      455                      460
Pro Lys Glu Asp Ala Thr Leu Pro Leu Leu Ser Phe Asp Glu Ser Ala
465                      470                      475                      480
Ser Thr Asn Phe Asn Arg Ala Lys Asp Ser Ile Ser Leu Leu Met Glu
                    485                      490                      495
Gln Pro Val Tyr Thr Ile His Arg Tyr Trp Arg Lys Phe Asp Asp Thr
                    500                      505                      510
Tyr Met Arg Pro Ile Phe Gly Gly Pro Arg Arg Glu Asn Gln Pro Glu
                    515                      520                      525
Cys
```

<210> 15
<211> 552
<212> PRT
<213> Arabidopsis thaliana

<400> 15
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Met Val Ile Gly Leu Ser Thr Met Leu Glu Lys Thr Glu Ala Leu Phe
  1               5                      10                      15
Ala Ser Asp His Ala Ser Val Val Ser Met Asn Leu Phe Val Ala Leu
                20                      25                      30
Leu Cys Ala Cys Ile Val Leu Gly His Leu Leu Glu Glu Thr Arg Trp
                35                      40                      45
Met Asn Glu Ser Ile Thr Ala Leu Ile Ile Gly Ser Cys Thr Gly Ile
                50                      55                      60
Val Ile Leu Leu Ile Ser Gly Gly Lys Ser Ser Arg Ile Leu Val Phe
65                      70                      75                      80
Ser Glu Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe Asn
                    85                      90                      95
Ala Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Met Thr
                    100                     105                     110
Ile Met Leu Phe Gly Ala Ile Gly Thr Leu Ile Ser Phe Val Ile Ile
                    115                     120                     125
Ser Phe Gly Ala Lys His Leu Phe Glu Lys Met Asn Ile Gly Asp Leu
                    130                     135                     140
Thr Ile Ala Asp Tyr Leu Ala Ile Gly Ala Ile Phe Ser Ala Thr Asp
145                     150                     155                     160
Ser Val Cys Thr Leu Gln Val Leu Asn Gln Asp Glu Thr Pro Leu Leu
                    165                     170                     175
Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val
                    180                     185                     190
Val Leu Phe Asn Ala Ile Gln Arg Phe Asp Leu Thr Asn Ile Asn Ser
                    195                     200                     205
Ala Ile Ala Leu Glu Phe Ala Gly Asn Phe Phe Tyr Leu Phe Ile Leu
                    210                     215                     220
```

```
Ser Thr Ala Leu Gly Val Ala Ala Gly Leu Leu Ser Ala Phe Val Ile
225             230             235             240
Lys Lys Leu Tyr Ile Gly Arg His Ser Thr Asp Arg Glu Val Ala Leu
            245             250             255
Met Met Leu Leu Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Phe His
            260             265             270
Leu Ser Ser Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser His
            275             280             285
Tyr Thr Trp His Asn Val Thr Asp Lys Ser Lys Val Thr Thr Lys His
            290             295             300
Thr Phe Ala Ala Met Ser Phe Leu Ala Glu Ile Phe Ile Phe Leu Tyr
305             310             315             320
Val Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Asp Val Val Arg Asn
                325             330             335
Ser Pro Gly Gln Ser Ile Gly Val Ser Ser Ile Leu Leu Gly Leu Ile
            340             345             350
Leu Leu Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Ser Asn
            355             360             365
Leu Thr Lys Ser Ser Pro Asp Glu Lys Ile Asp Leu Lys Lys Gln Val
            370             375             380
Thr Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Met Ala Leu
385             390             395             400
Ala Tyr Asn Gln Phe Thr Thr Ser Gly His Thr Lys Val Leu Gly Asn
                405             410             415
Ala Ile Met Ile Thr Ser Thr Ile Thr Val Val Leu Phe Ser Thr Val
                420             425             430
Val Phe Gly Leu Leu Thr Lys Pro Leu Val Lys His Leu Gln Pro Ser
            435             440             445
Ser Lys Gln Ser Ser Thr Thr Ala Leu Gln Ile Thr Leu Arg Ser Ser
            450             455             460
Phe His Asp Pro Ile Leu His Glu Pro Leu Leu Ser Thr Gln Gly Gln
465             470             475             480
Ser Glu Tyr Asp Pro Glu Gln His Val Ser Phe Arg Met Phe Trp Lys
                485             490             495
Ser Pro Ser Arg Ala Ile His His Tyr Trp Arg Lys Phe Asp Asn Ala
                500             505             510
Val Met Arg Arg Ile Phe Gly Gly Arg Gly Val Ser Pro Val Val Pro
            515             520             525
Gly Ser Pro Ile Glu Asn Ser Val Pro Gln Trp Ser Glu Glu Val Glu
            530             535             540
Asn Lys Glu Gln Asn Gly Glu Pro
545                 550


<210> 16
<211> 487
<212> PRT
<213> Arabidopsis thaliana

<400> 16
Met Glu Glu Val Met Ile Ser Pro Val Glu His Asp Pro Gln Gly Gln
 1               5               10              15
Val Lys Gln Gln Gln Ala Ala Gly Val Gly Ile Leu Leu Gln Ile Met
            20              25              30
Met Leu Val Leu Ser Phe Val Leu Gly His Val Leu Arg Arg His Arg
            35              40              45
Phe His Tyr Leu Pro Glu Ala Ser Gly Leu Ile Val Gly Ile Leu Ala
```

23

```
        50                    55                    60
Asn Ile Ser Asp Thr Glu Thr Ser Ile Arg Phe Cys Pro Pro Pro Ser
65                    70                    75                    80
Ile Pro Glu Phe Ser Leu Leu Ser Phe Pro Arg Ser Leu Lys Pro Phe
                85                    90                    95
Phe Ser Asn Phe Gly Ala Ile Val Thr Phe Ala Ile Ile Gly Thr Phe
                100                   105                   110
Val Ala Ser Val Val Thr Gly Gly Leu Val Tyr Leu Gly Gly Ser Met
                115                   120                   125
Tyr Leu Met Tyr Lys Leu Pro Phe Val Glu Cys Leu Met Phe Gly Ala
        130                   135                   140
Leu Ile Ser Ala Thr Asp Pro Val Thr Val Leu Ser Ile Phe Gln Asp
145                   150                   155                   160
Val Gly Thr Asp Val Asn Leu Tyr Ala Leu Val Phe Gly Glu Ser Val
                165                   170                   175
Leu Asn Asp Ala Val Ser Phe Tyr Tyr Leu Leu Arg Tyr Trp Ala Leu
                180                   185                   190
Pro Phe Lys Phe Phe Glu Thr Phe Ala Gly Ser Met Ser Ala Glu His
                195                   200                   205
Leu Phe Lys Tyr Ala Gly Leu Asp Thr Glu Asn Leu Gln Asn Leu Glu
        210                   215                   220
Cys Cys Leu Phe Val Leu Phe Pro Tyr Phe Ser Tyr Met Leu Ala Glu
225                   230                   235                   240
Gly Val Gly Leu Ser Gly Ile Val Ser Ile Leu Phe Thr Gly Ile Val
                245                   250                   255
Met Lys Arg Tyr Thr Phe Ser Asn Leu Ser Glu Ala Ser Gln Ser Phe
        260                   265                   270
Val Ser Ser Phe Phe His Leu Ile Ser Ser Leu Ala Glu Thr Phe Thr
        275                   280                   285
Phe Ile Tyr Met Gly Phe Asp Ile Ala Met Glu Gln His Ser Trp Ser
        290                   295                   300
His Val Gly Phe Ile Leu Phe Ser Ile Val Ser Ser Phe Thr Asp Arg
305                   310                   315                   320
Gln Ala Val Asn Val Phe Gly Cys Ala Tyr Leu Val Asn Leu Phe Arg
                325                   330                   335
Gln Glu Asn Gln Lys Ile Pro Met Lys His Gln Lys Ala Leu Trp Tyr
                340                   345                   350
Ser Gly Leu Arg Gly Ala Met Ala Phe Ala Leu Ala Leu Gln Ser Leu
        355                   360                   365
His Asp Leu Pro Glu Gly His Gly Gln Ile Ile Phe Thr Ala Thr Thr
        370                   375                   380
Thr Ile Val Val Val Thr Val Leu Leu Ile Gly Gly Ser Thr Gly Lys
385                   390                   395                   400
Met Leu Glu Ala Leu Glu Val Val Gly Asp Asp Leu Asp Asp Ser Met
                405                   410                   415
Ser Glu Gly Phe Glu Glu Ser Asp His Gln Tyr Val Pro Pro Pro Phe
                420                   425                   430
Ser Ile Gly Ala Ser Ser Asp Glu Asp Thr Ser Ser Ser Gly Ser Arg
                435                   440                   445
Phe Lys Met Lys Leu Lys Glu Phe His Lys Thr Thr Thr Ser Phe Thr
        450                   455                   460
Ala Leu Asp Lys Asn Phe Leu Thr Pro Phe Phe Thr Thr Asn Ser Gly
465                   470                   475                   480
Asp Gly Asp Gly Asp Gly Glu
                485
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<210> 17
<211> 531
<212> PRT
<213> Arabidopsis thaliana

<400> 17
Met Ser Ser Glu Leu Gln Ile Ser Pro Ala Ile His Asp Pro Gln Gly
1   5   10   15
Gln Glu Lys Gln Gln Gln Ala Ala Gly Val Gly Ile Leu Leu Gln Ile
            20   25   30
Met Met Leu Val Leu Ser Phe Val Leu Gly His Val Leu Arg Arg His
        35   40   45
Lys Phe Tyr Tyr Leu Pro Glu Ala Ser Ala Ser Leu Leu Ile Gly Leu
    50   55   60
Ile Val Gly Gly Leu Ala Asn Ile Ser Asn Thr Glu Thr Ser Ile Arg
65   70   75   80
Phe Val Glu Leu Phe Leu Ile Ser Phe Phe Arg His Gly Ser Ile Ser
                85   90   95
Thr Met Ser Ser Ser Phe Cys Phe Cys Cys Leu Pro Ser Tyr Tyr Ile
                100   105   110
Leu Lys Ile Glu Tyr Leu Gly Gly Val Met Phe Leu Met Tyr Arg Leu
            115   120   125
Pro Phe Val Glu Cys Leu Met Phe Gly Ser Leu Ile Ser Ala Thr Asp
    130   135   140
Pro Val Thr Val Leu Ser Ile Phe Gln Glu Leu Gly Ser Asp Val Asn
145   150   155   160
Leu Tyr Ala Leu Val Phe Gly Glu Ser Val Leu Asn Asp Ala Asp Glu
                165   170   175
Ile Val Thr Leu Leu Ile Arg Ser Phe Ser Phe Leu Cys Cys Phe Trp
            180   185   190
Gln Met Ala Ile Ser Leu Tyr Arg Thr Met Ser Leu Val Arg Ser His
        195   200   205
Ser Ser Gly Gln Asn Phe Phe Met Val Ile Val Arg Phe Leu Glu Thr
    210   215   220
Phe Val Gly Ser Met Ser Ala Ala Met Lys Tyr Phe Ile Leu Met Tyr
225   230   235   240
Ser Leu Leu Leu Ser Val Tyr Arg Thr Trp Ser Ala Val Ser Ser Tyr
                245   250   255
Phe Phe His Ile Ser Arg Asn Lys Thr Leu Leu Phe Tyr Thr Ser Tyr
                260   265   270
Val Ser Ile Tyr Phe Thr Leu Ile Glu Ile Val Gln Phe Val Met Lys
            275   280   285
His Tyr Thr Tyr Ser Asn Leu Ser Ala Asn Ser Gln Arg Phe Val Ser
    290   295   300
Ala Phe Phe His Leu Ile Ser Ser Leu Ala Glu Thr Phe Val Phe Ile
305   310   315   320
Tyr Met Gly Phe Asp Ile Ala Met Glu Lys His Ser Trp Ala Ala Asn
                325   330   335
Val Phe Gly Cys Gly Tyr Leu Val Asn Leu Ala Arg Pro Ala His Arg
                340   345   350
Lys Ile Pro Met Thr His Gln Lys Ala Leu Trp Tyr Ser Gly Lys Ile
            355   360   365
Leu Leu Cys Val Pro Leu Ser Ser Tyr Cys Phe Tyr Ser Ser Val Ile
            370   375   380
Asn Thr Lys Ile Cys Gly Phe Cys Ile Gly Leu Arg Gly Ala Met Ala
385   390   395   400
Phe Ala Leu Ala Leu Gln Ser Val His Asp Leu Pro Glu Gly His Gly

25

```
                    405                  410                  415
Gln Thr Ile Phe Thr Ala Thr Thr Ala Ile Val Val Leu Thr Val Leu
                420                  425                  430
Leu Ile Gly Gly Ser Thr Gly Thr Met Leu Glu Ala Leu Glu Val Val
                435                  440                  445
Gly Asp Ser His Asp Thr Ser Leu Gly Asp Gly Phe Glu Val Val Asn
            450                  455                  460
Ser Arg Tyr Met Thr Ser Tyr Asp Asp Glu Asp Thr Pro Pro Gly Ser
465                  470                  475                  480
Gly Phe Arg Thr Lys Leu Arg Glu Phe His Lys Ser Ala Ala Ser Phe
                485                  490                  495
Thr Glu Leu Asp Arg Asn Tyr Leu Thr Pro Phe Phe Thr Ser Asn Asn
                500                  505                  510
Gly Asp Tyr Asp Asp Glu Gly Asn Met Glu Gln His His Gly Asn Asn
                515                  520                  525
Ile Ile Leu
        530


<210> 18
<211> 697
<212> PRT
<213> Arabidopsis thaliana

<400> 18
Met Thr Ser Ile Ile Gly Ala Ala Leu Pro Tyr Lys Ser Pro Glu Lys
  1               5                  10                  15
Ala Ile Ala Ser Ser Ser Tyr Ser Ala Glu Asn Asp Ser Ser Pro Val
                20                  25                  30
Asp Ala Val Ile Phe Ala Gly Thr Ser Leu Val Leu Gly Thr Ala Cys
            35                  40                  45
Arg Tyr Leu Phe Asn Gly Thr Arg Val Pro Tyr Thr Val Val Leu Leu
        50                  55                  60
Val Ile Gly Ile Phe Leu Gly Ser Leu Glu Tyr Gly Thr Lys His Asn
65                  70                  75                  80
Leu Gly Lys Leu Gly His Gly Ile Arg Ile Trp Asn Gly Ile Asn Pro
                85                  90                  95
Asp Leu Leu Leu Ala Val Phe Leu Pro Val Leu Leu Phe Glu Ser Ser
            100                  105                  110
Phe Ser Met Asp Val His Gln Ile Lys Arg Cys Met Gly Gln Met Val
        115                  120                  125
Leu Leu Ala Gly Pro Gly Val Leu Ile Ser Thr Phe Cys Leu Gly Ala
        130                  135                  140
Leu Ile Lys Leu Thr Phe Pro Tyr Asn Trp Asp Trp Lys Thr Ser Leu
145                  150                  155                  160
Leu Leu Gly Gly Leu Leu Gly Ala Thr Asp Pro Val Ala Val Val Ala
                165                  170                  175
Leu Leu Lys Glu Leu Gly Ala Ser Lys Lys Met Thr Thr Leu Ile Asp
                180                  185                  190
Gly Glu Ser Leu Met Asn Asp Gly Val Ser Val Val Val Phe Gln Leu
            195                  200                  205
Phe Phe Lys Met Val Met Gly His Asn Ser Asp Trp Gly Ser Ile Ile
        210                  215                  220
Lys Phe Leu Val Gln Asn Ser Phe Gly Ala Val Gly Ile Gly Leu Ala
225                  230                  235                  240
Phe Gly Ile Ala Ser Val Phe Trp Leu Lys Phe Ile Phe Asn Asp Thr
                245                  250                  255
```

26

```
Val Ala Gln Ile Thr Val Thr Leu Ser Ala Ser Tyr Phe Ala Tyr Tyr
            260                 265             270
Thr Ala Gln Glu Trp Ala Gly Val Ser Gly Ile Leu Thr Val Met Ile
            275             280             285
Leu Gly Met Phe Phe Ala Ala Phe Ala Arg Thr Ala Phe Lys Gly Asp
        290             295             300
Ser His Gln Ser Leu His His Phe Trp Tyr Phe Thr Thr Gln Glu Met
305                 310             315                 320
Ala Ala Tyr Ile Ala Asn Thr Leu Val Phe Met Leu Ser Gly Val Ile
            325             330                 335
Ile Ala Glu Ser Val Leu Ser Gly Gln Thr Ile Ser Tyr Lys Ala Ile
            340             345             350
Lys Trp Lys Phe Ile Ser Gln Phe Arg Tyr Gly Asn Lys Ala Val Leu
           ·355             360             365
Gln Phe Leu Phe Leu Thr Gly Gly Ile Val Phe Leu Thr Leu Val Val
        370             375             380
Asn Gly Ser Thr Thr Gln Leu Leu Leu His Leu Leu Arg Met Asp Thr
385                 390             395                 400
Leu Thr Ala Thr Lys Lys Arg Ile Leu Glu Tyr Thr Lys Phe Glu Met
            405             410             415
Met Lys Thr Ala Leu Lys Ala Phe Glu Asn Leu Gly Asp Asp Glu Glu
            420             425             430
Leu Gly Ser Ala Asp Trp Pro Thr Val Ile Arg His Ile Ser Ser Leu
            435             440.        .    445
Lys Asp Leu Glu Gly Arg Gln Val Asn Pro His Asp Gly Tyr Glu Ala
            450             455             460
Gly Ser Leu Asp Pro Thr Asn Ile Met Asp Ile Arg Val Gln Ala Ala
465                 470             475                 480
Tyr Trp Glu Met Leu Asp Asp Gly Arg Ile Thr Gln Cys Thr Ala Asn
            485             490             495
Val Leu Met Gln Ser Val Asp Glu Ala Leu Asp Leu Val Ser Thr Ser
            500             505             510
Ser Leu Ser Asp Trp Arg Gly Leu Glu Pro Arg Val His Phe Pro Asn
            515             520             525
Tyr Tyr Lys Phe Leu Gln Ser Lys Ile Ile Pro His Lys Leu Val Thr
            530             535             540
His Leu Ile Val Glu Arg Leu Glu Ser Ala Cys Tyr Ile Ser Ser Ala
545                 550             555                 560
Phe Leu Arg Ala His Arg Ile Ala Arg Gln Gln Leu His Ile Phe Leu
            565             570             575
Gly Asn Ser Asn Ile Ala Ser Thr Val Ile Asn Glu Ser Glu Val Glu
            580             585             590
Gly Glu Glu Ala Lys Gln Phe Leu Glu Asp Val Arg Asp Ser Phe Pro
            595             600             605
Gln Val Leu Ser Val Leu Lys Thr Arg Gln Val Thr His Tyr Val Leu
            610             615             620
Asn His Leu Asn Gly Tyr Ile Lys Asn Leu Glu Lys Val Gly Leu Leu
625                 630             635                 640
Glu Gly Lys Glu Val Ser His Leu His Asp Val Val Gln Ser Asp Leu
            645             650             655
Lys Lys Leu Leu Arg His Pro Pro Ser Leu Lys Leu Pro Asn Val Asp
            660             665             670
Asp Leu Ile Thr Ser Asn Pro Leu Leu Lys Asp Arg Ser Ser Phe Arg
            675             680             685
Ser Leu Ala Ile Gly Glu Thr Asp Ala
            690             695
```

27

<210> 19
<211> 697
<212> PRT
<213> Arabidopsis thaliana

<400> 19

```
Met Thr Ser Ile Ile Gly Ala Ala Leu Pro Tyr Lys Ser Pro Glu Lys
 1               5                  10                  15
Ala Ile Ala Ser Ser Ser Tyr Ser Ala Glu Asn Asp Ser Ser Pro Val
                20                  25                  30
Asp Ala Val Ile Phe Ala Gly Thr Ser Leu Val Leu Gly Thr Ala Cys
                35                  40                  45
Arg Tyr Leu Phe Asn Gly Thr Arg Val Pro Tyr Thr Val Val Leu Leu
        50                  55                  60
Val Ile Gly Ile Phe Leu Gly Ser Leu Glu Tyr Gly Thr Lys His Asn
65                  70                  75                  80
Leu Gly Lys Leu Gly His Gly Ile Arg Ile Trp Asn Gly Ile Asn Pro
                85                  90                  95
Asp Leu Leu Leu Ala Val Phe Leu Pro Val Leu Leu Phe Glu Ser Ser
                100                 105                 110
Phe Ser Met Asp Val His Gln Ile Lys Arg Cys Met Gly Gln Met Val
        115                 120                 125
Leu Leu Ala Gly Pro Gly Val Leu Ile Ser Thr Phe Cys Leu Gly Ala
    130                 135                 140
Leu Ile Lys Leu Thr Phe Pro Tyr Asn Trp Asp Trp Lys Thr Ser Leu
145                 150                 155                 160
Leu Leu Gly Gly Leu Leu Gly Ala Thr Asp Pro Val Ala Val Val Ala
                165                 170                 175
Leu Leu Lys Glu Leu Gly Ala Ser Lys Lys Met Thr Thr Leu Ile Asp
                180                 185                 190
Gly Glu Ser Leu Met Asn Asp Gly Val Ser Val Val Val Phe Gln Leu
        195                 200                 205
Phe Phe Lys Met Val Met Gly His Asn Ser Asp Trp Gly Ser Ile Ile
    210                 215                 220
Lys Phe Leu Val Gln Asn Ser Phe Gly Ala Val Gly Ile Gly Leu Ala
225                 230                 235                 240
Phe Gly Ile Ala Ser Val Phe Trp Leu Lys Phe Ile Phe Asn Asp Thr
                245                 250                 255
Val Ala Gln Ile Thr Val Thr Leu Ser Ala Ser Tyr Phe Ala Tyr Tyr
                260                 265                 270
Thr Ala Gln Glu Trp Ala Gly Val Ser Gly Ile Leu Thr Val Met Ile
        275                 280                 285
Leu Gly Met Phe Phe Ala Ala Phe Ala Arg Thr Ala Phe Lys Gly Asp
    290                 295                 300
Ser His Gln Ser Leu His His Phe Trp Tyr Phe Thr Thr Gln Glu Met
305                 310                 315                 320
Ala Ala Tyr Ile Ala Asn Thr Leu Val Phe Met Leu Ser Gly Val Ile
                325                 330                 335
Ile Ala Glu Ser Val Leu Ser Gly Gln Thr Ile Ser Tyr Lys Ala Ile
                340                 345                 350
Lys Trp Lys Phe Ile Ser Gln Phe Arg Tyr Gly Asn Lys Ala Val Leu
        355                 360                 365
Gln Phe Leu Phe Leu Thr Gly Gly Ile Val Phe Leu Thr Leu Val Val
    370                 375                 380
Asn Gly Ser Thr Thr Gln Leu Leu Leu His Leu Leu Arg Met Asp Thr
385                 390                 395                 400
```

28

```
Leu Thr Ala Thr Lys Lys Arg Ile Leu Glu Tyr Thr Lys Phe Glu Met
            405                 410                 415
Met Lys Thr Ala Leu Lys Ala Phe Glu Asn Leu Gly Asp Asp Glu Glu
            420                 425                 430
Leu Gly Ser Ala Asp Trp Pro Thr Val Ile Arg His Ile Ser Ser Leu
            435                 440                 445
Lys Asp Leu Glu Gly Arg Gln Val Asn Pro His Asp Gly Tyr Glu Ala
    450                 455                 460
Gly Ser Leu Asp Pro Thr Asn Ile Met Asp Ile Arg Val Gln Ala Ala
465                 470                 475                 480
Tyr Trp Glu Met Leu Asp Asp Gly Arg Ile Thr Gln Cys Thr Ala Asn
            485                 490                 495
Val Leu Met Gln Ser Val Asp Glu Ala Leu Asp Leu Val Ser Thr Ser
            500                 505                 510
Ser Leu Ser Asp Trp Arg Gly Leu Glu Pro Arg Val His Phe Pro Asn
            515                 520                 525
Tyr Tyr Lys Phe Leu Gln Ser Lys Ile Ile Pro His Lys Leu Val Thr
            530                 535                 540
His Leu Ile Val Glu Arg Leu Glu Ser Ala Cys Tyr Ile Ser Ser Ala
545                 550                 555                 560
Phe Leu Arg Ala His Arg Ile Ala Arg Gln Gln Leu His Ile Phe Leu
            565                 570                 575
Gly Asn Ser Asn Ile Ala Ser Thr Val Ile Asn Glu Ser Glu Val Glu
            580                 585                 590
Gly Glu Glu Ala Lys Gln Phe Leu Glu Asp Val Arg Asp Ser Phe Pro
            595                 600                 605
Gln Val Leu Ser Val Leu Lys Thr Arg Gln Val Thr His Tyr Val Leu
    610                 615                 620
Asn His Leu Asn Gly Tyr Ile Lys Asn Leu Glu Lys Val Gly Leu Leu
625                 630                 635                 640
Glu Gly Lys Glu Val Ser His Leu His Asp Val Val Gln Ser Asp Leu
            645                 650                 655
Lys Lys Leu Leu Arg His Pro Pro Ser Leu Lys Leu Pro Asn Val Asp
            660                 665                 670
Asp Leu Ile Thr Ser Asn Pro Leu Leu Lys Asp Arg Ser Ser Phe Arg
            675                 680                 685
Ser Leu Ala Ile Gly Glu Thr Asp Ala
    690                 695
```

<210> 20
<211> 534
<212> PRT
<213> Lycopersicon esculentum

<400> 20
```
Met Gly Leu Asp Ala Val Ala Arg Leu Gly Val Ser Ile Leu Ser Asp
  1               5                  10                  15
Gly Asp Gln Val Ser Val Asp Ser Ile Thr Leu Phe Val Ala Leu Leu
            20                  25                  30
Cys Gly Cys Ile Val Ile Gly His Leu Leu Glu Glu Ser Arg Trp Ile
            35                  40                  45
Asn Asp Ser Ile Thr Thr Leu Val Ile Gly Leu Ser Thr Gly Gly Ile
    50                  55                  60
Ile Leu Leu Thr Thr Lys Gly Lys Ser Ser His Leu Leu Glu Phe Asp
65                  70                  75                  80
Glu Gln Leu Phe Phe Ile Tyr Val Leu Pro Pro Ile Ile Phe Asn Ala
```

29

```
                     85                        90                        95
Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Val Thr Ile
            100                       105                       110
Met Leu Phe Gly Ala Val Gly Thr Leu Ile Ser Phe Ser Ile Ile Ser
        115                       120                       125
Phe Gly Ala Lys Glu Leu Leu Gly Lys Leu Asp Ile Gly Phe Leu Glu
    130                       135                       140
Leu Arg Asp Tyr Leu Ala Ile Gly Ala Ile Phe Ser Ala Thr Asp Ser
145                       150                       155                       160
Val Cys Thr Leu Gln Ala Leu Asn Gln Asp Glu Thr Pro Arg Leu Tyr
                165                       170                       175
Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val Val
                180                       185                       190
Leu Phe Asn Ala Ile Gln Lys Leu Asp Leu Ser His Ile Asn Ser Arg
        195                       200                       205
Ala Ala Leu Val Phe Thr Gly Asn Phe Leu Tyr Leu Phe Leu Ala Ser
    210                       215                       220
Thr Phe Leu Gly Val Leu Ile Gly Leu Leu Ser Ala Tyr Leu Ile Lys
225                       230                       235                       240
Lys Ile Tyr Leu Gly Arg His Ser Thr Asp Arg Glu Val Ala Leu Met
                245                       250                       255
Ile Leu Met Ala Tyr Leu Ser Tyr Val Met Ala Glu Leu Phe Asp Leu
                260                       265                       270
Ser Gly Ile Leu Thr Val Phe Ile Cys Gly Ile Val Met Ser His Tyr
            275                       280                       285
Thr Trp His Asn Val Thr Phe Asn Ser Lys Val Thr Thr Arg His Ala
    290                       295                       300
Phe Ala Thr Leu Ser Phe Ile Ala Glu Ile Phe Ile Phe Leu Tyr Val
305                       310                       315                       320
Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Arg Phe Val Lys Asp Ser
                325                       330                       335
Pro Gly Lys Ser Val Gly Val Ser Ala Ala Leu Leu Gly Leu Val Leu
            340                       345                       350
Val Gly Arg Ala Cys Phe Val Phe Pro Leu Ser Leu Phe Ser Asn Cys
        355                       360                       365
Leu Lys Arg Ser Glu His Asp Lys Phe Gly Leu Lys Leu Gln Val Thr
    370                       375                       380
Ile Trp Trp Ala Gly Leu Met Arg Gly Ser Val Ser Met Ala Leu Ala
385                       390                       395                       400
Tyr Asn Gln Phe Thr Arg Phe Gly His Thr Gln Gln Pro Gly Asn Ala
                405                       410                       415
Val Met Ile Thr Ser Thr Ile Thr Ile Val Leu Phe Ser Thr Val Val
            420                       425                       430
Phe Gly Leu Ile Thr Lys Pro Leu Val Arg Phe Leu Leu Pro Ser Ser
        435                       440                       445
Gln Gly Phe Asn Asn Leu Ile Ser Ser Glu Gln Ser Phe Ala Arg Pro
    450                       455                       460
Leu Leu Thr Asn Glu Gln Glu Leu Glu Leu Glu Met Gly Asn Val Asp
465                       470                       475                       480
Pro Val Arg Pro Ser Gly Leu Ser Ile Leu Leu Lys Glu Pro Ser Tyr
                485                       490                       495
Thr Ile His Asn His Trp Arg Arg Phe Asp Asp Ala Phe Met Arg Pro
            500                       505                       510
Leu Phe Gly Gly Arg Gly Phe Val Pro Asp Ala Pro Glu Leu Ser Lys
        515                       520                       525
Gly Gly Cys Asp Gln Tyr
    530
```

30

<210> 21
<211> 531
<212> PRT
<213> Lycopersicon esculentum

<400> 21
Met Glu Asp His Leu Gln Ile Ser Pro Ala Gly Ala Lys Ala Ile Pro
1   5   10   15
Gly Lys Glu Gln Gln Ala Ala Gly Tyr Gly Ile Leu Leu Gln Ile Met
                20   25   30
Met Leu Val Leu Ser Phe Val Ile Gly His Val Leu Arg Arg Arg His
        35   40   45
Phe Tyr Tyr Ile Pro Glu Ala Ser Ala Ser Leu Leu Ile Gly Leu Ile
    50   55   60
Val Gly Gly Leu Ala Asn Val Ser Asp Thr Glu Thr Ser Ile Arg Ala
65   70   75   80
Trp Phe Asn Phe His Glu Glu Phe Phe Phe Leu Phe Leu Leu Pro Pro
                85   90   95
Ile Ile Phe Gln Ser Gly Phe Ser Leu Ser Pro Lys Pro Phe Phe Ser
                100   105   110
Asn Phe Gly Ala Ile Ile Thr Phe Ala Ile Leu Gly Thr Phe Ile Ala
            115   120   125
Ser Phe Val Thr Gly Ile Leu Val Tyr Leu Gly Gly Val Thr Tyr Leu
    130   135   140
Met Tyr Arg Leu Pro Phe Val Glu Cys Leu Met Phe Gly Ala Leu Ile
145   150   155   160
Ser Ala Thr Asp Pro Val Thr Val Leu Ser Ile Phe Gln Glu Leu Gly
            165   170   175
Thr Asp Val Asn Leu Tyr Ala Leu Val Phe Gly Glu Ser Val Leu Asn
        180   185   190
Asp Ala Met Ala Ile Ser Leu Tyr Arg Thr Met Ser Leu Val Arg Ser
        195   200   205
His Met Ser Thr Asp Gln Asn Tyr Phe Met Ile Thr Ile Arg Phe Val
    210   215   220
Glu Thr Phe Met Gly Ser Leu Ser Ala Gly Val Gly Val Gly Phe Val
225   230   235   240
Ser Ala Leu Leu Phe Lys Tyr Ala Gly Leu Asp Ile Asp Asn Leu Gln
            245   250   255
Asn Leu Glu Ser Cys Leu Phe Val Leu Phe Pro Tyr Phe Ser Tyr Met
            260   265   270
Leu Ala Glu Gly Leu Gly Leu Ser Gly Ile Val Ser Ile Leu Phe Thr
        275   280   285
Gly Val Val Met Lys Arg Tyr Thr Tyr Pro Asn Leu Ser Glu Ser Ser
    290   295   300
Gln Arg Phe Val Ser Ala Phe Phe His Leu Ile Ser Ser Leu Ala Glu
305   310   315   320
Thr Phe Val Phe Ile Tyr Met Gly Phe Asp Ile Ala Met Glu Lys His
            325   330   335
Ser Trp Ser His Val Gly Phe Ile Phe Phe Ser Ile Leu Phe Ile Val
            340   345   350
Ile Ala Arg Ala Ala Asn Val Phe Gly Cys Ala Tyr Leu Val Asn Leu
        355   360   365
Val Arg Pro Pro His Gln Lys Ile Pro Ala Lys His Gln Lys Ala Leu
    370   375   380
Trp Tyr Ser Gly Leu Arg Gly Ala Met Ala Phe Ala Leu Ala Leu Gln

31

```
385                     390                     395                     400
Pro Val His Asp Leu Pro Glu Gly His Gly Gln Ala Ile Phe Thr Ala
                405                     410                     415
Thr Thr Ala Ile Val Val Leu Thr Val Leu Ile Ile Gly Gly Ser Ala
                420                     425                     430
Gly Thr Met Leu Glu Ala Leu Glu Val Val Gly Asp Gly Gln Ser Gly
                435                     440                     445
Ser Met Asp Glu Thr Phe Glu Gly Asn Asn Gly Tyr Ile Ala Pro Ser
        450                     455                     460
Tyr Arg Asp Glu Ser Tyr Asp Gly Glu Pro Ser Ser Gly Asn Arg Phe
465                     470                     475                     480
Arg Met Lys Leu Lys Glu Phe His Lys Ser Thr Thr Ser Phe Ser Ala
                485                     490                     495
Leu Asp Lys Asn Tyr Leu Thr Pro Phe Phe Thr Thr Gln Gly Gly Asp
                500                     505                     510
Glu Asp Glu Asp Glu Pro Ile Met His Ser Ser Arg Arg Ala Gly Tyr
        515                     520                     525
Asp Gly His
    530


<210> 22
<211> 535
<212> PRT
<213> Oryza sativa

<400> 22
Met Gly Met Glu Val Ala Ala Ala Arg Leu Gly Ala Leu Tyr Thr Thr
 1               5                       10                      15
Ser Asp Tyr Ala Ser Val Val Ser Ile Asn Leu Phe Val Ala Leu Leu
                20                      25                      30
Cys Ala Cys Ile Val Leu Gly His Leu Leu Glu Glu Asn Arg Trp Val
                35                      40                      45
Asn Glu Ser Ile Thr Ala Leu Ile Ile Gly Leu Cys Thr Gly Val Val
        50                      55                      60
Ile Leu Leu Met Thr Lys Gly Lys Ser Ser His Leu Phe Val Phe Ser
65                      70                      75                      80
Glu Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe Asn Ala
                85                      90                      95
Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Met Thr Ile
                100                     105                     110
Thr Leu Phe Gly Ala Val Gly Thr Met Ile Ser Phe Phe Thr Ile Ser
        115                     120                     125
Ile Ala Ala Ile Ala Ile Phe Ser Arg Met Asn Ile Gly Thr Leu Asp
        130                     135                     140
Val Gly Asp Phe Leu Ala Ile Gly Ala Ile Phe Ser Ala Thr Asp Ser
145                     150                     155                     160
Val Cys Thr Leu Gln Val Leu Asn Gln Asp Glu Thr Pro Phe Leu Tyr
                165                     170                     175
Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Ile Val
                180                     185                     190
Leu Phe Asn Ala Leu Gln Asn Phe Asp Leu Val His Ile Asp Ala Ala
        195                     200                     205
Val Val Leu Lys Phe Leu Gly Asn Phe Phe Tyr Leu Phe Leu Ser Ser
    210                     215                     220
Thr Phe Leu Gly Val Phe Ala Gly Leu Leu Ser Ala Tyr Ile Ile Lys
225                     230                     235                     240
```

32

```
Lys Leu Tyr Ile Gly Arg His Ser Thr Asp Arg Glu Val Ala Leu Met
            245             250                 255
Met Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Leu Asp Leu
            260             265                 270
Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser His Tyr
            275             280                 285
Thr Trp His Asn Val Thr Glu Ser Ser Arg Val Thr Thr Lys His Ala
            290             295                 300
Phe Ala Thr Leu Ser Phe Ile Ala Glu Thr Phe Leu Phe Leu Tyr Val
305             310                 315                 320
Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Glu Phe Ala Ser Asp Arg
            325             330                 335
Pro Gly Lys Ser Ile Gly Ile Ser Ser Ile Leu Leu Gly Leu Val Leu
            340             345                 350
Ile Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Ser Asn Leu
            355             360                 365
Thr Lys Lys Ala Pro Asn Glu Lys Ile Thr Trp Arg Gln Gln Val Val
    370             375                 380
Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Ile Ala Leu Ala
385             390                 395                 400
Tyr Asn Lys Phe Thr Arg Ser Gly His Thr Gln Leu His Gly Asn Ala
            405             410                 415
Ile Met Ile Thr Ser Thr Ile Thr Val Val Leu Phe Ser Thr Met Val
            420             425                 430
Phe Gly Met Met Thr Lys Pro Leu Ile Arg Leu Leu Leu Pro Ala Ser
            435             440                 445
Gly His Pro Val Thr Ser Glu Pro Ser Ser Pro Lys Ser Leu His Ser
    450             455                 460
Pro Leu Leu Thr Ser Met Gln Gly Ser Asp Leu Glu Ser Thr Thr Asn
465             470                 475                 480
Ile Val Arg Pro Ser Ser Leu Arg Met Leu Leu Thr Lys Pro Thr His
            485             490                 495
Thr Val His Tyr Tyr Trp Arg Lys Phe Asp Asp Ala Leu Met Arg Pro
            500             505                 510
Met Phe Gly Gly Arg Gly Phe Val Pro Phe Ser Pro Gly Ser Pro Thr
            515             520                 525
Glu Gln Ser His Gly Gly Arg
    530             535
```

<210> 23
<211> 553
<212> PRT
<213> Nierembergia caerulea

<400> 23
```
Met Ala Phe Asp Phe Gly Thr Leu Leu Gly Lys Met Asn Asn Leu Thr
1               5                   10                  15
Thr Ser Asp His Gln Ser Val Val Ser Val Asn Leu Phe Val Ala Leu
            20              25                  30
Ile Cys Ala Cys Ile Val Ile Gly His Leu Leu Glu Glu Asn Arg Trp
            35              40                  45
Met Asn Glu Ser Ile Thr Ala Leu Val Ile Gly Ser Cys Thr Gly Val
    50              55                  60
Ile Ile Leu Leu Ile Ser Gly Gly Lys Asn Ser His Ile Leu Val Phe
65              70                  75                  80
Ser Glu Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe Asn
```

33

```
                     85                    90                    95
Ala Gly Phe Gln Val Lys Lys Lys Ser Phe Phe Arg Asn Phe Ser Thr
                100                   105                   110
Ile Met Leu Phe Gly Ala Val Gly Thr Leu Ile Ser Phe Ile Ile Ile
            115                   120                   125
Ser Ala Gly Ala Ile Gly Ile Phe Lys Lys Met Asp Ile Gly His Leu
        130                   135                   140
Glu Ile Gly Asp Tyr Leu Ala Ile Gly Ala Ile Phe Ala Ala Thr Asp
    145                   150                   155                   160
Ser Val Cys Thr Leu Gln Val Leu Asn Gln Glu Glu Thr Pro Leu Leu
                165                   170                   175
Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val
                180                   185                   190
Val Leu Phe Asn Ala Val Gln Asn Phe Asp Leu Ser His Ile Ser Thr
            195                   200                   205
Gly Lys Ala Leu Gln Leu Ile Gly Asn Phe Leu Tyr Leu Phe Ala Ser
        210                   215                   220
Ser Thr Phe Leu Gly Val Ala Val Gly Leu Leu Ser Ala Phe Ile Ile
    225                   230                   235                   240
Lys Lys Leu Tyr Phe Gly Arg His Ser Thr Asp Arg Glu Val Ala Ile
                245                   250                   255
Met Ile Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Phe Tyr
                260                   265                   270
Leu Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser His
            275                   280                   285
Tyr Thr Trp His Asn Val Thr Glu Ser Ser Arg Val Thr Thr Lys His
    290                   295                   300
Thr Phe Ala Thr Leu Ser Phe Ile Ala Glu Ile Phe Ile Phe Leu Tyr
    305                   310                   315                   320
Val Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Lys Phe Val Ser Asp
                325                   330                   335
Ser Pro Gly Thr Ser Ile Lys Val Ser Ser Ile Leu Leu Gly Leu Val
                340                   345                   350
Leu Val Gly Arg Gly Ala Phe Val Phe Pro Leu Ser Phe Leu Ser Asn
            355                   360                   365
Leu Thr Lys Lys Asn Pro Glu Asp Lys Ile Ser Phe Asn Gln Gln Val
    370                   375                   380
Thr Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Met Ala Leu
385                   390                   395                   400
Ala Tyr Asn Gln Phe Thr Arg Gly Gly His Thr Gln Leu Arg Ala Asn
                405                   410                   415
Ala Ile Met Ile Thr Ser Thr Ile Thr Val Val Leu Phe Ser Thr Val
            420                   425                   430
Val Phe Gly Leu Met Thr Lys Pro Leu Ile Leu Leu Leu Leu Pro Ser
            435                   440                   445
Gln Lys His Leu Ile Arg Met Ile Ser Ser Glu Pro Met Thr Pro Lys
        450                   455                   460
Ser Phe Ile Val Pro Leu Leu Asp Ser Thr Gln Asp Ser Glu Ala Asp
465                   470                   475                   480
Leu Gly Arg His Val Pro Arg Pro His Ser Leu Arg Met Leu Leu Ser
                485                   490                   495
Thr Pro Ser His Thr Val His Tyr Tyr Trp Arg Lys Phe Asp Asn Ala
            500                   505                   510
Phe Met Arg Pro Val Phe Gly Gly Arg Gly Phe Val Pro Phe Val Pro
        515                   520                   525
Gly Ser Pro Thr Glu Pro Val Glu Pro Thr Glu Pro Arg Pro Ala Glu
    530                   535                   540
```

Ser Arg Pro Thr Glu Pro Thr Asp Glu
545   550

<210> 24
<211> 542
<212> PRT
<213> Citrus x paradisi

<400> 24
Met Asp Gln Ala Ile Ser Ser Val Val Arg Lys Leu Gln Met Val Asn
 1   5   10   15
Thr Ser Asp His Asn Ser Val Val Ser Ile Asn Ile Phe Val Ala Leu
         20   25   30
Pro Cys Ala Ser Ile Val Ile Gly His Leu Leu Glu Glu Ser Arg Trp
         35   40   45
Met Asn Glu Ser Ile Thr Ala Leu Leu Ile Gly Val Cys Ala Gly Val
     50   55   60
Ile Ile Leu Leu Thr Thr Gly Gly Lys Ser Ser His Leu Phe Val Phe
65   70   75   80
Ser Glu Asp Leu Phe Phe Ile Tyr Val Leu Pro Pro Ile Ile Phe Asn
             85   90   95
Ala Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Ile Thr
·   100   105   110
Ile Met Leu Phe Gly Ala Ile Gly Thr Leu Val Ser Cys Thr Ile Ile
         115   120   125
Ser Leu Gly Val Ile Gln Phe Phe Lys Lys Leu Asp Ile Gly Thr Leu
     130   135   140
Asp Ile Gly Asp Tyr Leu Ala Ile Gly Ala Ile Phe Ala Ala Thr Asp
145   150   155   160
Ser Val Cys Thr Leu Gln Val Leu Asn Gln Asp Asp Thr Pro Leu Leu
             165   170   175
Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val
             180   185   190
Val Leu Phe Asn Ala Ile Gln Ser Phe Asp Leu Thr His Ile Asn Thr
             195   200   205
Arg Ser Ala Phe Gln Phe Ile Gly Asn Phe Leu Tyr Leu Phe Phe Thr
     210   215   220
Ser Thr Leu Leu Gly Val Ile Gly Gly Leu Leu Ser Ala Tyr Val Ile
225   230   235   240
Lys Lys Leu Tyr Phe Gly Arg His Ser Thr Asp Arg Glu Val Ala Ile
             245   250   255
Met Val Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Phe Tyr
             260   265   270
Leu Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser His
         275   280   285
Tyr Thr Trp His Asn Val Thr Glu Ser Ser Arg Val Thr Thr Lys His
     290   . 295   300
Thr Phe Ala Thr Leu Ser Phe Val Ala Glu Ile Phe Thr Phe Leu Tyr
305   310   315   320
Val Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Arg Phe Val Lys Gly
             325   330   335
Ser Pro Gly Thr Ser Val Ala Ala Ser Ala Met Leu Met Gly Leu Ile
             340   345   350
Met Ala Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Thr Asn
         355   360 ·   365
Leu Ala Lys Lys Ser Pro Thr Glu Lys Ile Ser Ile Lys Gln Gln Val

35

```
        370                 375                 380
Ile Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Met Ala Leu
385                 390                 395                 400
Ala Tyr Asn Gln Phe Thr Arg Ser Gly His Thr Gln Leu Arg Glu Asn
                405                 410                 415
Ala Ile Met Ile Thr Ser Thr Ile Thr Val Val Leu Phe Ser Thr Val
                420                 425                 430
Val Phe Gly Leu Met Thr Glu Pro Leu Ile Arg Leu Leu Leu Pro His
            435                 440                 445
Pro Lys His Thr Thr Asn His Ile Leu Ser Asp Pro Ser Thr Pro Lys
            450                 455                 460
Ser Leu Ser Gln Pro Leu Leu Glu Glu Gly Gln Gln Asp Ser Tyr Ala
465                 470                 475                 480
Asp Leu Val Gly Pro Thr Val Pro Arg Pro Gly Ser Leu Arg Ala Leu
                485                 490                 495
Leu Thr Thr Pro Thr His Thr Val His Tyr Tyr Trp Arg Lys Phe Asp
            500                 505                 510
Asp Ala Phe Met Arg Pro Val Phe Gly Gly Arg Gly Phe Ala Pro Phe
            515                 520                 525
Val Pro Gly Ser Pro Thr Glu Arg Ser Val Arg Gly Gly Gln
            530                 535                 540


<210> 25
<211> 546
<212> PRT
<213> Triticum aestivum

<400> 25
Met Gly Leu Asp Leu Gly Ala Leu Ala Leu Lys Tyr Thr Gly Leu Ala
  1               5                  10                  15
Val Ser Asp His Asp Ser Ile Val Ala Ile Asn Ile Phe Ile Ala Leu
                20                  25                  30
Leu Cys Gly Cys Ile Val Phe Gly His Leu Leu Glu Gly Asn Arg Trp
            35                  40                  45
Val Asn Glu Ser Thr Thr Ala Leu Val Leu Gly Leu Ile Thr Gly Gly
        50                  55                  60
Val Ile Leu Ile Cys Thr Lys Gly Val Asn Ser Arg Ile Leu Ile Phe
65                  70                  75                  80
Ser Glu Asp Ile Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe Asn
                85                  90                  95
Ala Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Ala Thr
            100                 105                 110
Ile Ile Leu Phe Gly Ala Ala Gly Thr Leu Ile Ser Phe Val Ile Ile
            115                 120                 125
Thr Phe Gly Ala Met Gly Leu Phe Ser Lys Leu Asp Val Gly Pro Leu
            130                 135                 140
Glu Leu Gly Asp Tyr Leu Ala Ile Gly Ala Ile Phe Ser Ala Thr Asp
145                 150                 155                 160
Ser Val Cys Thr Leu Gln Val Leu Asn Gln Asp Glu Ala Pro Leu Leu
                165                 170                 175
Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val
                180                 185                 190
Val Leu Phe Asn Ala Ile Gln Asn Ile Asp Ile Asn His Phe Asp Val
                195                 200                 205
Phe Val Leu Leu Gln Phe Ile Gly Lys Phe Leu Tyr Leu Phe Phe Thr
            210                 215                 220
```

36

```
Ser Thr Val Leu Gly Val Ala Ala Gly Leu Leu Ser Ala Tyr Ile Ile
225                 230                 235                 240
Lys Lys Leu Cys Phe Ala Arg His Ser Thr Asp Arg Glu Val Ala Ile
                245                 250                 255
Met Ile Leu Met Ala Tyr Leu Ser Tyr Met Leu Ser Met Leu Leu Asp
                260                 265                 270
Leu Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser His
                275                 280                 285
Tyr Thr Trp His Asn Val Thr Glu Ser Ser Arg Val Thr Thr Lys His
                290                 295                 300
Thr Phe Ala Thr Leu Ser Phe Ile Ala Glu Ile Phe Leu Phe Leu Tyr
305                 310                 315                 320
Val Gly Met Asp Ala Leu Asp Ile Asp Lys Trp Lys Leu Ala Ser Ser
                325                 330                 335
Ser Pro Lys Lys Pro Ile Ala Leu Ser Ala Val Ile Leu Gly Leu Val
                340                 345                 350
Met Val Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Ser Asn
                355                 360                 365
Leu Ser Lys Lys Glu Ser His Pro Lys Ile Ser Phe Asn Gln Gln Val
                370                 375                 380
Ile Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Ile Ala Leu
385                 390                 395                 400
Ala Tyr Asn Lys Phe Thr Thr Ser Gly His Thr Ala Val Arg Val Asn
                405                 410                 415
Ala Val Met Ile Thr Ser Thr Ile Ile Val Val Leu Phe Ser Thr Met
                420                 425                 430
Val Phe Gly Leu Leu Thr Lys Pro Leu Ile Asn Leu Leu Ile Pro Pro
                435                 440                 445
Arg Pro Gly Thr Ala Ala Asp Ile Ser Ser Gln Ser Phe Leu Asp Pro
                450                 455                 460
Leu Thr Ala Ser Leu Leu Gly Ser Asp Phe Asp Val Gly Gln Leu Thr
465                 470                 475                 480
Pro Gln Thr Asn Leu Gln Tyr Leu Leu Thr Met Pro Thr Arg Ser Val
                485                 490                 495
His Arg Val Trp Arg Lys Phe Asp Asp Lys Phe Met Arg Pro Met Phe
                500                 505                 510
Gly Gly Arg Gly Phe Val Pro Phe Val Pro Gly Ser Pro Ile Glu Arg
                515                 520                 525
Ser Val His Gly Pro Gly Leu Leu Gly Thr Val Thr Glu Ala Glu Asp
        530                 535                 540
Arg Ser
545


<210> 26
<211> 538
<212> PRT
<213> Triticum aestivum

<400> 26
Met Gly Tyr Gln Val Val Ala Ala Gln Leu Ala Arg Leu Ser Gly Ala
  1                 5                 10                 15
Leu Gly Thr Ser Asp His Ala Ser Val Val Ser Ile Thr Leu Phe Val
                20                 25                 30
Ala Leu Leu Cys Ala Cys Ile Val Leu Gly His Leu Leu Glu Glu Asn
        35                 40                 45
Arg Trp Leu Asn Glu Ser Ile Thr Ala Leu Ile Ile Gly Leu Cys Thr
```

```
            50                          55                          60
Gly Val Val Ile Leu Met Thr Thr Lys Gly Lys Ser Ser His Val Leu
65                          70                          75                          80
Val Phe Ser Glu Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile
                    85                          90                          95
Phe Asn Ala Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe
                    100                         105                         110
Met Ala Ile Thr Leu Phe Gly Ala Val Gly Thr Met Met Ser Phe Phe
                    115                         120                         125
Thr Ile Ser Leu Ala Ala Ile Ala Ile Phe Ser Arg Met Asn Ile Gly
        130                         135                         140
Thr Leu Asp Val Ser Asp Phe Leu Ala Ile Gly Ala Ile Phe Ser Ala
145                         150                         155                         160
Thr Asp Ser Val Cys Thr Leu Gln Val Leu Asn Gln Asp Glu Thr Pro
                    165                         170                         175
Phe Leu Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr
                    180                         185                         190
Ser Val Val Leu Phe Asn Ala Leu Gln Asn Phe Asp Pro Asn Gln Ile
                    195                         200                         205
Asp Ala Ile Val Ile Leu Lys Phe Leu Gly Asn Phe Cys Tyr Leu Phe
        210                         215                         220
Val Ser Ser Thr Phe Leu Gly Val Phe Thr Gly Leu Leu Ser Ala Tyr
225                         230                         235                         240
Val Ile Lys Lys Leu Tyr Ile Gly Arg His Ser Thr Asp Arg Glu Val
                    245                         250                         255
Ala Leu Val Met Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu
                    260                         265                         270
Leu Asp Leu Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met
                    275                         280                         285
Ser His Tyr Thr Trp His Asn Val Thr Glu Ser Ser Arg Val Thr Thr
        290                         295                         300
Lys His Ala Phe Ala Thr Leu Ser Phe Ile Ala Glu Thr Phe Leu Phe
305                         310                         315                         320
Leu Tyr Val Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Lys Phe Ala
                    325                         330                         335
Ser Asp Ser Pro Gly Lys Ser Ile Gly Ile Ser Ser Ile Leu Leu Gly
                    340                         345                         350
Leu Val Leu Val Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu
                    355                         360                         365
Ser Asn Leu Thr Lys Lys Thr Glu Leu Glu Lys Ile Ser Trp Arg Gln
        370                         375                         380
Gln Ile Val Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Ile
385                         390                         395                         400
Ala Leu Ala Tyr Asn Lys Phe Thr Arg Ser Gly His Thr Gln Leu His
                    405                         410                         415
Gly Asn Ala Ile Met Ile Thr Ser Thr Ile Thr Val Val Leu Phe Ser
                    420                         425                         430
Thr Met Leu Phe Gly Ile Leu Thr Lys Pro Leu Ile Arg Phe Leu Leu
                    435                         440                         445
Pro Ala Ser Ser Asn Gly Ala Ala Ser Asp Pro Ala Ser Pro Lys Ser
        450                         455                         460
Leu His Ser Pro Leu Leu Thr Ser Gln Leu Gly Ser Asp Leu Glu Ala
465                         470                         475                         480
Pro Leu Pro Ile Val Arg Pro Ser Ser Leu Arg Met Leu Ile Thr Lys
                    485                         490                         495
Pro Thr His Thr Ile His Tyr Tyr Trp Arg Lys Phe Asp Asp Ala Leu
                    500                         505                         510
```

38

```
Met Arg Pro Met Phe Gly Gly Arg Gly Phe Val Pro Tyr Ser Pro Gly
        515                 520                 525
Ser Pro Thr Asp Pro Asn Val Leu Val Glu
        530                 535


<210> 27
<211> 546
<212> PRT
<213> Triticum aestivum

<400> 27
Met Gly Leu Asp Leu Gly Ala Leu Ala Leu Lys Tyr Thr Gly Leu Ala
 1               5                  10                  15
Val Ser Asp His Asp Ser Ile Val Ala Ile Asn Ile Phe Ile Ala Leu
        20                  25                  30
Leu Cys Gly Cys Ile Val Phe Gly His Leu Leu Gly Gly Asn Arg Trp
        35                  40                  45
Val Asn Glu Ser Thr Ala Ala Leu Val Leu Gly Leu Ile Thr Gly Gly
        50                  55                  60
Val Ile Leu Ile Cys Thr Lys Gly Val Asn Ser Arg Ile Leu Ile Phe
65                  70                  75                  80
Ser Glu Asp Ile Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe Asn
                85                  90                  95
Ala Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Ala Thr
                100                 105                 110
Ile Ile Leu Phe Gly Ala Ala Gly Thr Leu Ile Ser Phe Val Ile Ile
        115                 120                 125
Thr Phe Gly Ala Met Gly Leu Phe Ser Lys Leu Asp Val Gly Pro Leu
        130                 135                 140
Glu Leu Gly Asp Tyr Leu Ala Ile Gly Ala Ile Phe Ser Ala Thr Asp
145                 150                 155                 160
Ser Val Cys Thr Leu Gln Val Leu Asn Gln Asp Glu Ala Pro Leu Leu
                165                 170                 175
Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val
                180                 185                 190
Val Leu Phe Asn Ala Ile Gln Asn Ile Asp Ile Asn His Phe Asp Val
                195                 200                 205
Phe Gly Leu Leu Gln Phe Ile Gly Lys Phe Leu Tyr Leu Phe Phe Thr
        210                 215                 220
Ser Thr Val Leu Gly Val Ala Ala Gly Leu Leu Ser Ala Tyr Ile Ile
225                 230                 235                 240
Lys Lys Leu Cys Phe Ala Arg His Ser Thr Asp Arg Glu Val Ala Ile
                245                 250                 255
Met Ile Leu Met Ala Tyr Leu Ser Cys Met Leu Ser Met Leu Leu Asp
                260                 265                 270
Leu Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser His
        275                 280                 285
Tyr Thr Trp His Asn Val Thr Glu Ser Ser Arg Val Thr Thr Lys His
        290                 295                 300
Thr Phe Ala Thr Leu Ser Phe Ile Ala Glu Ile Phe Leu Phe Leu Tyr
305                 310                 315                 320
Val Gly Met Asp Ala Leu Asp Ile Asp Lys Trp Lys Leu Ala Ser Ser
                325                 330                 335
Ser Pro Lys Lys Pro Ile Ala Leu Ser Ala Val Ile Leu Gly Leu Val
        340                 345                 350
Met Val Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Ser Asn
```

39

```
                 355                      360                      365
Leu Ser Lys Lys Glu Ser His Pro Lys Ile Ser Phe Asn Gln Gln Val
     370                      375                      380
Ile Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Ile Ala Leu
385                      390                      395                      400
Ala Tyr Asn Lys Phe Thr Thr Ser Gly His Thr Ala Val Arg Val Asn
                 405                      410                      415
Ala Val Met Ile Thr Ser Thr Ile Ile Val Val Leu Phe Ser Thr Met
                 420                      425                      430
Val Phe Gly Leu Leu Thr Lys Pro Leu Ile Asn Leu Leu Ile Pro Pro
                 435                      440                      445
Arg Pro Gly Thr Ala Ala Asp Ile Ser Ser Gln Ser Phe Leu Asp Pro
                 450                      455                      460
Leu Thr Ala Ser Leu Leu Gly Ser Asp Phe Asp Val Gly Gln Leu Thr
465                      470                      475                      480
Pro Gln Thr Asn Leu Gln Tyr Leu Leu Thr Met Pro Thr Arg Ser Ala
                 485                      490                      495
His Arg Val Trp Arg Lys Phe Asp Asp Lys Phe Met Arg Pro Met Phe
                 500                      505                      510
Gly Gly Arg Gly Phe Val Pro Phe Val Pro Gly Ser Pro Ile Glu Arg
                 515                      520                      525
Ser Val His Gly Pro Gly Leu Leu Gly Thr Val Thr Glu Ala Glu Asp
     530                      535                      540
Arg Ser
545


<210> 28
<211> 540
<212> PRT
<213> Zea mays

<400> 28
Met Gly Leu Gly Val Val Ala Glu Leu Val Arg Leu Gly Val Leu Ser
  1                 5                      10                      15
Ser Thr Ser Asp His Ala Ser Val Val Ser Ile Asn Leu Phe Val Ala
                  20                      25                      30
Leu Leu Cys Ala Cys Ile Val Leu Gly His Leu Leu Glu Glu Asn Arg
                  35                      40                      45
Trp Val Asn Glu Ser Thr Ala Leu Ile Val Gly Leu Gly Thr Gly Thr
     50                      55                      60
Val Ile Leu Met Ile Ser Arg Gly Val Val Ile His Val Leu Val Phe
65                      70                      75                      80
Ser Glu Asp Leu Phe Phe Phe Tyr Leu Leu Pro Pro Ile Ile Phe Asn
                  85                      90                      95
Ala Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Ile Thr
                 100                     105                     110
Ile Thr Leu Phe Gly Ala Val Gly Thr Leu Ile Ser Phe Thr Val Ile
                 115                     120                     125
Ser Leu Gly Ala Leu Gly Leu Ile Ser Arg Leu Asn Ile Gly Ala Leu
                 130                     135                     140
Glu Leu Gly Asp Tyr Leu Ala Leu Gly Ala Ile Phe Ser Ala Thr Asp
145                     150                     155                     160
Ser Val Cys Thr Leu Gln Val Leu Ser Gln Asp Glu Thr Pro Phe Leu
                 165                     170                     175
Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val
                 180                     185                     190
```

```
Val Val Phe Asn Ala Leu Gln Asn Phe Asp Ile Thr His Ile Asp Ala
        195                 200                 205
Glu Val Val Phe His Leu Leu Gly Asn Phe Phe Tyr Leu Phe Leu Leu
        210                 215                 220
Ser Thr Val Leu Gly Val Ala Thr Gly Leu Ile Ser Ala Leu Val Ile
225                 230                 235                 240
Lys Lys Leu Tyr Phe Gly Arg His Ser Thr Asp Arg Glu Val Ala Leu
                245                 250                 255
Met Met Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Phe Ala
                260                 265                 270
Leu Ser Gly Ile Leu Thr Val Phe Phe Gly Cys Ile Val Met Ser His
        275                 280                 285
Tyr Thr Trp His Asn Val Thr Glu Ser Ser Arg Ile Thr Thr Lys His
        290                 295                 300
Ala Phe Ala Thr Leu Ser Phe Leu Ala Glu Thr Phe Leu Phe Leu Tyr
305                 310                 315                 320
Val Gly Met Asp Ala Leu Asp Ile Asp Lys Trp Arg Ser Val Ser Asp
                325                 330                 335
Thr Pro Gly Lys Ser Leu Ala Ile Ser Ser Ile Leu Met Gly Leu Val
                340                 345                 350
Met Val Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Ser Asn
        355                 360                 365
Leu Ala Lys Lys Thr Glu His Glu Lys Ile Ser Trp Lys Gln Gln Val
        370                 375                 380
Val Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Met Ala Leu
385                 390                 395                 400
Ala Tyr Lys Lys Phe Thr Arg Ala Gly His Thr Gln Val Arg Gly Asn
                405                 410                 415
Ala Ile Met Ile Thr Ser Thr Ile Ile Val Val Leu Phe Ser Thr Met
                420                 425                 430
Val Phe Gly Leu Leu Thr Lys Pro Leu Ile Asn Leu Leu Ile Pro His
        435                 440                 445
Arg Asn Ala Thr Ser Met Leu Ser Asp Asp Ser Ser Pro Lys Ser Leu
        450                 455                 460
His Ser Pro Leu Leu Thr Ser Gln Leu Gly Ser Asp Leu Glu Glu Pro
465                 470                 475                 480
Thr Asn Ile Pro Arg Pro Ser Ser Ile Arg Gly Glu Phe Leu Thr Met
                485                 490                 495
Thr Arg Thr Val His Arg Tyr Trp Arg Lys Phe Asp Asp Ala Phe Met
                500                 505                 510
Arg Pro Met Phe Gly Gly Arg Gly Phe Val Pro Phe Val Pro Gly Ser
        515                 520                 525
Pro Thr Glu Arg Asn Pro Pro Asp Leu Ser Lys Ala
        530                 535                 540


<210> 29
<211> 540
<212> PRT
<213> Zea mays

<400> 29
Met Gly Leu Gly Val Asp Ala Glu Thr Val Arg Leu Gly Val Leu Ser
 1               5                   10                  15
Ser Thr Ser Asp His Ala Ser Val Val Ser Asn Asn Phe Phe Val Ala
                20                  25                  30
Leu Leu Cys Ala Cys Ile Val Leu Gly His Leu Leu Glu Glu Asn Arg
```

41

```
              35                      40                      45
Met Val Asn Glu Ser Ile Thr Ala Leu Leu Val Gly Leu Gly Thr Gly
         50                      55                      60
Thr Val Ile Leu Met Ile Ser Arg Gly Val Ser Ile His Val Leu Val
65                      70                      75                      80
Phe Ser Glu Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe
                   85                      90                      95
Asn Ala Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Ile
              100                     105                     110
Thr Ile Ile Leu Phe Gly Ala Ile Gly Thr Leu Ile Ser Phe Val Ile
              115                     120                     125
Ile Ser Leu Gly Ala Met Gly Leu Phe Lys Lys Leu Asp Val Gly Pro
         130                     135                     140
Leu Glu Leu Gly Asp Tyr Leu Ala Ile Gly Ala Ile Phe Ser Ala Thr
145                     150                     155                     160
Asp Ser Val Cys Thr Leu Gln Val Leu Asn Gln Asp Glu Thr Pro Leu
                   165                     170                     175
Leu Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser
              180                     185                     190
Ile Val Val Phe Asn Ala Leu Gln Asn Phe Asp Ile Thr His Ile Asn
              195                     200                     205
Ala Glu Val Val Phe His Leu Leu Gly Asn Phe Leu Tyr Leu Phe Leu
         210                     215                     220
Leu Ser Thr Val Leu Gly Val Ala Thr Gly Leu Ile Ser Ala Leu Val
225                     230                     235                     240
Ile Lys Lys Ile Tyr Phe Gly Arg His Ser Thr Asp Arg Glu Val Ala
                   245                     250                     255
Leu Met Met Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Phe
              260                     265                     270
Ala Leu Ser Gly Ile Leu Thr Val Phe Phe Gly Cys Ile Val Met Ser
         275                     280                     285
His Tyr Thr Trp His Asn Val Thr Glu Ser Ser Arg Ile Thr Thr Lys
         290                     295                     300
His Ala Phe Ala Thr Leu Ser Phe Leu Ala Glu Thr Phe Ile Phe Leu
305                     310                     315                     320
Tyr Val Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Arg Ser Val Ser
              325                     330                     335
Asp Thr Pro Gly Lys Ser Ile Ala Ile Ser Ser Ile Leu Met Gly Leu
              340                     345                     350
Val Met Leu Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Ser
         355                     360                     365
Asn Leu Ala Lys Lys Asn Glu His Glu Lys Ile Ser Trp Lys Gln Gln
         370                     375                     380
Val Val Ile Trp Trp Ser Gly Leu Met Arg Gly Ala Val Ser Met Ala
385                     390                     395                     400
Leu Ala Tyr Asn Lys Phe Thr Arg Ala Gly His Thr Glu Val Arg Gly
              405                     410                     415
Asn Glu Ile Met Ile Thr Ser Thr Ile Thr Val Val Leu Phe Ser Thr
         420                     425                     430
Val Val Phe Gly Leu Leu Thr Lys Pro Leu Ile Arg Leu Leu Met Pro
         435                     440                     445
His Arg His Leu Thr Met Leu Ser Asp Asp Ser Thr Pro Lys Ser Leu
         450                     455                     460
His Ser Pro Leu Leu Thr Ser Gln Leu Gly Ser Ser Ile Glu Glu Pro
465                     470                     475                     480
Thr Gln Ile Pro Arg Pro Thr Asn Ile Arg Gly Glu Phe Thr Thr Met
                   485                     490                     495
```

```
Thr Arg Thr Val His Arg Tyr Trp Arg Lys Phe Asp Asp Lys Phe Met
        500                 505                 510
Arg Pro Met Phe Gly Gly Arg Gly Phe Val Pro Phe Val Pro Gly Ser
        515                 520                 525              .
Pro Thr Glu Arg Asn Pro His Asp Leu Ser Lys Pro
        530                 535                 540


<210> 30
<211> 539
<212> PRT
<213> Zea mays


<400> 30
Met Ser Ile Gly Leu Thr Ala Glu Thr Val Thr Asn Lys Leu Ala Ser
1               5                   10                  15
Ala Glu His Pro Gln Val Val Pro Asn Ser Val Phe Ile Ala Leu Leu
        20                  25                  30
Cys Leu Cys Leu Val Ile Gly His Leu Leu Glu Glu Asn Arg Trp Val
        35                  40                  45
Asn Glu Ser Ile Thr Ala Ile Leu Val Gly Ala Ala Thr Gly Thr Val
        50                  55                  60
Ile Leu Leu Ile Ser Lys Gly Lys Ser Ser His Ile Leu Val Phe Asp
65                  70                  75                  80
Glu Glu Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe Asn Ala
                85                  90                  95
Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Ile Thr Ile
            100                 105                 110
Ile Leu Phe Gly Ala Ile Gly Thr Leu Ile Ser Phe Val Ile Ile Ser
        115                 120                 125
Leu Gly Ala Met Gly Leu Phe Lys Lys Leu Asp Val Gly Pro Leu Glu
        130                 135                 140
Leu Gly Asp Tyr Leu Ala Ile Gly Ala Ile Phe Ser Ala Thr Asp Ser
145                 150                 155                 160
Val Cys Thr Leu Gln Val Leu Asn·Gln Asp Glu Thr Pro Leu Leu Tyr
                165.                170                 175
Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val Val
            180                 185                 190
Leu Phe Asn Ala Val Gln Lys Ile Asp Phe Glu His Leu Thr Gly Glu
        195                 200                 205
Val Ala Leu Gln Val Phe Gly Asn Phe Leu Tyr Leu Phe Ser Thr Ser
        210                 215                 220
Thr Val Leu Gly Ile Ala Thr Gly Leu Ile Thr Ala Phe Val Leu Lys
225                 230                 235                 240
Thr Leu Tyr Phe Gly Arg His Ser Thr Thr Arg Glu Leu Ala Ile Met
                245                 250                 255
Val Leu Met Ala Tyr Leu Ser Phe Met Leu Ala Glu Leu Phe Ser Leu
            260                 265                 270
Ser Gly Ile Ile Thr Val Phe Phe Cys Gly Val Leu Met Ser His Val
            275                 280                 285
Thr Trp His Asn Val Thr Glu Ser Ser Arg Ile Thr Ser Arg His Val
        290                 295                 300
Phe Ala Met Leu Ser Phe Ile Ala Glu Thr Phe Leu Phe Leu Tyr Val
305                 310                 315                 320
Gly Thr Asp Ala Leu Asp Phe Thr Lys Trp Lys Thr Ser Ser Leu Ser
                325                 330                 335
Phe Gly Lys Ser Leu Gly Val Ser Ser Val Leu Leu Gly Leu Val Leu
```

43

```
                340                    345                    350
Val Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Ser Asn Leu
            355                    360                    365
Ser Lys Lys His Pro Gly Glu Lys Ile Thr Ile Arg Gln Gln Val Val
        370                    375                    380
Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Ile Ala Leu Ala
385                    390                    395                    400
Phe Asn Lys Phe Thr Arg Ala Gly His Thr Gln Val Arg Gly Asn Ala
                405                    410                    415
Ile Met Ile Thr Ser Thr Ile Ile Val Val Leu Phe Ser Thr Val Val
            420                    425                    430
Phe Gly Leu Leu Thr Lys Pro Leu Ile Asn Leu Leu Ile Pro His Arg
            435                    440                    445
Asn Ala Thr Ser Met Leu Ser Asp Asp Ser Ser Pro Lys Ser Leu His
        450                    455                    460
Ser Pro Leu Leu Thr Ser Gln Leu Ile Ser Ser Ile Glu Glu Pro Thr
465                    470                    475                    480
Gln Ile Pro Arg Pro Thr Asn Ile Arg Gly Glu Phe Met Thr Met Thr
                485                    490                    495
Arg Thr Val His Arg Tyr Trp Arg Lys Phe Asp Asp Lys Phe Met Arg
            500                    505                    510
Pro Met Phe Gly Gly Arg Gly Phe Val Pro Phe Val Pro Gly Ser Pro
        515                    520                    525
Thr Glu Arg Ser Ser Pro Asp Leu Ser Lys Ala
    530                    535


<210> 31
<211> 538
<212> PRT
<213> Zea mays

<400> 31
Met Gly Tyr Gln Val Val Ala Ala Gln Leu Lys Leu Ala Ser Ser Ala
 1                 5                    10                    15
Asp His Ala Ser Val Val Ile Ile Thr Leu Phe Val Ala Leu Leu Cys
            20                    25                    30
Ala Cys Ile Val Leu Gly His Leu Leu Glu Glu Asn Arg Trp Leu Asn
        35                    40                    45
Glu Ser Ile Thr Ala Leu Ile Ile Gly Leu Gly Thr Gly Val Val Ile
    50                    55                    60
Leu Leu Ile Ser Arg Gly Lys Asn Ser Arg Leu Leu Val Phe Ser Glu
65                    70                    75                    80
Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe Asn Ala Gly
                85                    90                    95
Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Met Thr Ile Thr
            100                    105                    110
Leu Phe Gly Ala Val Gly Thr Met Ile Ser Phe Phe Thr Ile Ser Leu
            115                    120                    125
Gly Ala Ile Ala Thr Phe Ser Arg Met Ser Ile Gly Thr Leu Asp Val
        130                    135                    140
Gly Asp Phe Leu Ala Ile Gly Ala Ile Phe Ser Ala Thr Asp Ser Val
145                    150                    155                    160
Cys Thr Leu Gln Val Leu His Gln Asp Glu Thr Pro Phe Leu Tyr Ser
                165                    170                    175
Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val Val Leu
            180                    185                    190
```

44

```
Phe Asn Ala Val Gln Lys Ile Gln Phe Thr His Ile Asn Ala Trp Thr
        195                 200                 205
Ala Leu Gln Leu Ile Gly Asn Phe Leu Tyr Leu Phe Ser Thr Ser Thr
        210                 215                 220
Leu Leu Gly Ile Gly Thr Gly Leu Ile Thr Ala Phe Val Leu Lys Lys
225                 230                 235                 240
Leu Tyr Phe Gly Arg His Ser Thr Thr Arg Glu Leu Ala Ile Met Ile
                245                 250                 255
Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Phe Ser Leu Ser
                260                 265                 270
Gly Leu Leu Thr Val Phe Phe Cys Gly Val Leu Met Ser His Val Thr
            275                 280                 285
Trp His Asn Val Thr Glu Ser Ser Arg Thr Thr Ser Arg His Val Phe
        290                 295                 300
Ala Thr Leu Ser Phe Ile Ser Glu Thr Phe Ile Phe Leu Tyr Val Gly
305                 310                 315                 320
Met Asp Ala Leu Asp Phe Glu Lys Trp Lys Thr Ser Ser Leu Ser Phe
                325                 330                 335
Gly Gly Thr Leu Gly Val Ser Gly Val Leu Met Gly Leu Val Met Leu
                340                 345                 350
Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Ser Asn Leu Ala
                355                 360                 365
Lys Lys His Gln Ser Glu Lys Ile Ser Phe Arg Met Gln Val Val Ile
        370                 375                 380
Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Met Ala Leu Ala Leu
385                 390                 395                 400
Asn Lys Phe Thr Arg Ser Gly His Thr Gln Leu His Gly Asn Ala Ile
                405                 410                 415
Met Ile Thr Ser Thr Ile Thr Val Val Leu Phe Ser Thr Met Val Phe
                420                 425                 430
Gly Met Ile Thr Lys Pro Leu Ile Arg Leu Leu Leu Pro Ala Ser Gly
        435                 440                 445
His Pro Arg Glu Leu Ser Glu Pro Ser Ser Pro Lys Ser Phe His Ser
        450                 455                 460
Pro Leu Leu Thr Ser Gln Gln Gly Ser Asp Leu Glu Ser Thr Thr Asn
465                 470                 475                 480
Ile Val Arg Pro Ser Ser Leu Arg Gly Leu Leu Thr Lys Pro Thr His
                485                 490                 495
Thr Val His Tyr Tyr Trp Arg Lys Phe Asp Asp Ala Leu Met Arg Pro
                500                 505                 510
Val Phe Gly Gly Arg Gly Phe Val Pro Phe Val Pro Gly Ser Pro Thr
        515                 520                 525
Glu Arg Asn Pro Pro Asp Leu Ser Lys Ala
        530                 535
```

```
<210> 32
<211> 545
<212> PRT
<213> Zea mays

<400> 32
Met Ser Met Gly Tyr Gln Val Val Ala Ala Gln Leu Lys Val Ala Ser
 1               5                  10                  15
Ser Ala Asp His Ala Ser Val Val Ile Ile Thr Leu Phe Val Ala Leu
            20                  25                  30
Leu Cys Ala Cys Ile Val Leu Gly His Leu Leu Glu Glu Asn Arg Trp
```

45

```
              35                        40                        45
Leu Asn Glu Ser Ile Thr Ala Leu Ile Ile Gly Leu Cys Thr Gly Gly
    50                        55                        60
Val Ile Leu Met Thr Thr Lys Gly Lys Ser Ser His Val Leu Val Phe
65                        70                        75                        80
Ser Glu Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe Ile
                  85                        90                        95
Ala Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Met Thr
              100                       105                       110
Ile Thr Leu Phe Gly Ala Val Gly Thr Met Ile Ser Phe Phe Thr Ile
              115                       120                       125
Ser Leu Gly Ala Ile Ala Ile Phe Ser Arg Met Asn Ile Gly Thr Leu
    130                       135                       140
Asp Val Gly Asp Phe Leu Ala Ile Gly Ala Ile Phe Ser Ala Thr Asp
145                       150                       155                       160
Ser Val Cys Thr Leu Gln Val Leu His Gln Asp Glu Thr Pro Phe Leu
              165                       170                       175
Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val
              180                       185                       190
Val Leu Phe Asn Ala Val Gln Lys Ile Gln Ile Thr His Ile Asn Ala
              195                       200                       205
Glu Val Ala Leu Gln Val Phe Gly Asn Phe Leu Tyr Leu Phe Ser Thr
    210                       215                       220
Ser Thr Leu Leu Gly Ile Ala Thr Gly Leu Ile Thr Ser Phe Val Leu
225                       230                       235                       240
Lys Lys Leu Tyr Phe Ala Arg His Ser Thr Thr Arg Glu Leu Ala Ile
              245                       250                       255
Met Met Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Phe Ser
              260                       265                       270
Leu Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Val Leu Met Ser His
    275                       280                       285
Val Thr Trp His Asn Val Thr Glu Ser Ser Arg Ile Thr Ser Arg His
    290                       295                   .   300
Val Phe Ala Met Leu Ser Phe Ile Ala Glu Thr Phe Ile Phe Leu Tyr
305                       310                       315                       320
Val Gly Thr Asp Ala Leu Asp Phe Asp Lys Trp Lys Thr Ser Ser Leu
              325   .                   330                       335
Ser Phe Gly Gly Thr Leu Gly Val Ser Ala Leu Ile Met Ala Leu Val
              340                       345                       350
Leu Leu Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Val Leu Thr Asn
              355                       360                       365
Phe Ser Asn Lys His Glu Asn Glu Ser Ile Thr Phe Lys His Gln Val
    370                       375                       380
Ile Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Ile Ala Leu
385                       390               .       395                       400
Ala Phe Lys Gln Phe Thr Tyr Ser Gly Val Thr Leu Asp Pro Val Asn
              405                       410                       415
Ala Ala Met Val Thr Asn Thr Thr Ile Val Val Leu Phe Thr Thr Leu
              420                       425                       430
Val Phe Gly Leu Leu Thr Lys Pro Leu Ile Arg Leu Leu Met Pro His
              435                       440                       445
Arg His Leu Thr Met Leu Ser Asp Asp Ser Thr Pro Lys Ser Leu His
    450                       455                       460
Ser Pro Leu Leu Thr Ser Gln Leu Gly Ser Asp Leu Glu Glu Pro Thr
465                       470                       475                       480
Asn Ile Pro Arg Pro Ser Ser Ile Arg Gly Glu Phe Leu Thr Met Thr
              485                       490                       495
```

46

```
Arg Thr Val His Arg Tyr Trp Arg Lys Phe Asp Asp Ala Phe Met Arg
            500                 505                 510
Pro Met Phe Gly Gly Arg Gly Phe Val Pro Val Val Pro Gly Ser Pro
            515                 520                 525
Ile Glu Arg Ser Val Pro Gln Trp Ser Glu Glu Ala His Asn Lys Glu
    530                 535                 540
Pro
545
```

<210> 33
<211> 541
<212> PRT
<213> Zea mays

<400> 33
```
Met Gly Leu Gly Val Val Ala Glu Leu Val Arg Leu Gly Val Leu Ser
  1               5                  10                  15
Ser Thr Ser Asp His Ala Ser Val Val Ser Ile Asn Leu Phe Val Ala
            20                  25                  30
Leu Leu Cys Ala Cys Ile Val Leu Gly His Leu Leu Glu Glu Asn Arg
            35                  40                  45
Trp Val Asn Glu Ser Ile Thr Ala Leu Ile Ile Gly Leu Cys Thr Gly
    50                  55                  60
Val Val Ile Leu Leu Thr Thr Lys Gly Lys Ser Ser His Ile Leu Val
65                  70                  75                  80
Phe Ser Glu Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe
                85                  90                  95
Asn Ala Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Met
            100                 105                 110
Thr Ile Thr Leu Phe Gly Ala Val Gly Thr Met Ile Ser Phe Phe Thr
            115                 120                 125
Ile Ser Leu Gly Ala Leu Gly Leu Ile Ser Arg Leu Asn Ile Gly Ala
    130                 135                 140
Leu Glu Leu Gly Asp Tyr Leu Ala Leu Gly Ala Ile Phe Ser Ala Thr
145                 150                 155                 160
Asp Ser Val Cys Thr Leu Gln Val Leu Ser Gln Asp Glu Thr Pro Phe
                165                 170                 175
Leu Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser
            180                 185                 190
Val Val Val Phe Asn Ala Leu Gln Asn Phe Asp Ile Thr His Ile Asp
            195                 200                 205
Ala Glu Val Val Phe His Leu Leu Gly Asn Phe Phe Tyr Leu Phe Leu
    210                 215                 220
Leu Ser Thr Val Leu Gly Val Ala Thr Gly Leu Ile Ser Ala Leu Val
225                 230                 235                 240
Ile Lys Lys Leu Tyr Phe Gly Arg His Ser Thr Asp Arg Glu Val Ala
                245                 250                 255
Leu Met Met Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Phe
            260                 265                 270
Ala Leu Ser Gly Ile Leu Thr Val Phe Phe Gly Cys Ile Val Met Ser
            275                 280                 285
His Tyr Thr Trp His Asn Val Thr Glu Ser Ser Arg Ile Thr Thr Lys
    290                 295                 300
His Ala Phe Ala Thr Leu Ser Phe Leu Ala Glu Thr Phe Leu Phe Leu
305                 310                 315                 320
Tyr Val Gly Met Asp Ala Leu Asp Ile Asp Lys Trp Arg Ser Val Ser
```

47

```
                              325                     330                     335
Asp Thr Pro Gly Lys Ser Leu Ala Ile Ser Ser Ile Leu Met Gly Leu
                340                     345                     350
Val Met Val Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Ser
                355                     360                     365
Asn Leu Ala Lys Lys Thr Glu His Glu Lys Ile Ser Trp Lys Gln Gln
            370                     375                     380
Val Val Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Met Ala
385                     390                     395                     400
Leu Ala Tyr Lys Lys Phe Thr Arg Ala Gly His Thr Gln Val Arg Gly
                405                     410                     415
Asn Ala Ile Met Ile Thr Ser Thr Ile Ile Val Val Leu Phe Ser Thr
                420                     425                     430
Met Val Phe Gly Leu Leu Thr Lys Pro Leu Ile Asn Leu Leu Ile Pro
                435                     440                     445
His Arg Asn Ala Thr Ser Met Leu Ser Asp Asp Ser Ser Pro Lys Ser
            450                     455                     460
Leu His Ser Pro Leu Leu Thr Ser Gln Leu Gly Ser Asp Leu Glu Glu
465                     470                     475                     480
Pro Thr Asn Ile Pro Arg Pro Ser Ser Ile Arg Gly Glu Phe Leu Thr
                485                     490                     495
Met Thr Arg Thr Val His Arg Tyr Trp Arg Lys Phe Asp Asp Ala Phe
                500                     505                     510
Met Arg Pro Met Phe Gly Gly Arg Gly Phe Val Pro Phe Val Pro Gly
                515                     520                     525
Ser Pro Thr Glu Arg Asn Pro Pro Asp Leu Ser Lys Ala
            530                     535                     540
```

<210> 34
<211> 543
<212> PRT
<213> Gossypium hirsutum

<400> 34
```
Met Val Ala Pro Gln Leu Ala Ala Val Phe Thr Lys Leu Gln Thr Leu
  1                   5                      10                      15
Ser Thr Ser Asp His Ala Ser Val Val Ser Met Asn Ile Phe Val Ala
                20                      25                      30
Leu Leu Cys Ala Cys Ile Val Ile Gly His Leu Leu Glu Glu Asn Arg
            35                      40                      45
Trp Met Asn Glu Ser Ile Thr Ala Leu Ile Ile Gly Val Phe Thr Gly
        50                      55                      60
Val Ile Ile Leu Leu Thr Ser Gly Gly Lys Ser Ser His Leu Leu Val
65                      70                      75                      80
Phe Ser Glu Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe
                85                      90                      95
Asn Ala Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Ile
            100                     105                     110
Thr Ile Met Leu Phe Gly Ala Val Gly Thr Leu Ile Ser Cys Thr Ile
            115                     120                     125
Ile Ser Leu Gly Val Ile Asn Phe Phe Lys Glu Met Asp Ile Gly Ser
        130                     135                     140
Leu Asp Ile Gly Asp Phe Leu Ala Ile Gly Ala Ile Phe Ala Ala Thr
145                     150                     155                     160
Asp Ser Val Cys Thr Leu Gln Val Leu Asn Gln Asp Glu Thr Pro Leu
                165                     170                     175
```

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Leu Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser
            180                 185                 190
Val Val Leu Phe Asn Ala Ile Gln Ser Phe Asp Leu Val Asn Thr Ser
        195                 200                 205
Pro Arg Ile Leu Leu Glu Phe Ile Gly Ser Phe Leu Tyr Leu Phe Leu
    210                 215                 220
Ala Ser Thr Met Leu Gly Val Ile Val Gly Leu Val Ser Ala Tyr Ile
225                 230                 235                 240
Ile Lys Lys Leu Tyr Phe Gly Arg His Ser Thr Asp Arg Glu Phe Ala
                245                 250                 255
Leu Met Met Leu Met Ala Tyr Leu Ser Tyr Ile Met Ala Glu Leu Phe
            260                 265                 270
Tyr Leu Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser
        275                 280                 285
His Tyr Thr Trp His Asn Val Thr Glu Ser Ser Arg Val Thr Thr Lys
    290                 295                 300
His Ala Phe Ala Thr Leu Ser Phe Val Ala Glu Thr Phe Leu Phe Leu
305                 310                 315                 320
Tyr Val Gly Met Asp Ala Leu Asp Met Glu Lys Trp Arg Phe Val Ser
            325                 330                 335
Asp Ser Pro Gly Thr Ser Val Ala Val Ser Ala Val Leu Met Gly Leu
            340                 345                 350
Val Met Val Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Ser
    355                 360                 365
Asn Leu Ala Lys Lys Ser Thr Ser Glu Lys Ile Ser Phe Arg Glu Gln
    370                 375                 380
Ile Ile Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Met Ala
385                 390                 395                 400
Leu Ala Tyr Asn Gln Phe Thr Arg Gly Gly His Thr Gln Leu Arg Gly
            405                 410                 415
Asn Ala Ile Met Ile Thr Ser Thr Ile Thr Ile Val Leu Phe Ser Thr
            420                 425                 430
Val Val Phe Gly Leu Met Thr Lys Pro Leu Ile Arg Phe Leu Leu Pro
        435                 440                 445
His Pro Lys Pro Thr Ala Ser Met Leu Ser Asp Gln Ser Thr Pro Lys
    450                 455                 460
Ser Met Glu Ala Pro Phe Leu Gly Ser Gly Gln Asp Ser Phe Asp Asp
465                 470                 475                 480
Ser Leu Ile Gly Val His Arg Pro Asn Ser Ile Arg Ala Leu Leu Thr
            485                 490                 495
Thr Pro Ala His Thr Val His Tyr Tyr Trp Arg Lys Phe Asp Asn Ala
            500                 505                 510
Phe Met Arg Pro Met Phe Gly Gly Arg Gly Phe Val Pro Phe Val Pro
        515                 520                 525
Gly Ser Pro Thr Glu Arg Ser Glu Pro Asn Leu Pro Gln Trp Gln
    530                 535                 540


<210> 35
<211> 557
<212> PRT
<213> Suaeda maritima

<400> 35
Met Trp Ser Gln Leu Ser Ser Phe Phe Ala Ser Lys Met Asp Met Val
1                 5                 10                 15
Ser Thr Ser Asp His Ala Ser Val Val Ser Met Asn Leu Phe Val Ala
```

49

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                 20                    25                    30
Leu Leu Cys Gly Cys Ile Val Ile Gly His Leu Leu Glu Glu Asn Arg
        35                    40                    45
Trp Met Asn Glu Ser Ile Thr Ala Leu Leu Ile Gly Leu Ser Thr Gly
        50                    55                    60
Ile Ile Ile Leu Leu Ile Ser Gly Gly Lys Ser Ser His Leu Leu Val
65                    70                    75                    80
Phe Ser Glu Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe
                 85                    90                    95
Asn Ala Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Ile
                100                   105                   110
Thr Ile Ile Leu Phe Gly Ala Val Gly Thr Leu Val Ser Phe Ile Ile
        115                   120                   125
Ile Ser Leu Gly Ser Ile Ala Ile Phe Gln Lys Met Asp Ile Gly Ser
        130                   135                   140
Leu Glu Leu Gly Asp Leu Leu Ala Ile Gly Ala Ile Phe Ala Ala Thr
145                   150                   155                   160
Asp Ser Val Cys Thr Leu Gln Val Leu Asn Gln Asp Glu Thr Pro Leu
                165                   170                   175
Leu Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser
        180                   185                   190
Val Val Leu Phe Asn Ala Ile Gln Asn Phe Asp Leu Thr His Ile Asp
        195                   200                   205
His Arg Ile Ala Tyr Arg Ile Ala Phe Gln Phe Gly Gly Asn Phe Leu
        210                   215                   220
Tyr Leu Phe Phe Ala Ser Thr Leu Leu Gly Ala Val Thr Gly Leu Leu
225                   230                   235                   240
Ser Ala Tyr Val Ile Lys Lys Leu Tyr Phe Gly Arg His Ser Thr Asp
        245                   250                   255
Arg Glu Val Ala Leu Met Met Leu Met Ala Tyr Leu Ser Tyr Met Leu
        260          .        265                   270
Ala Glu Leu Phe Tyr Leu Ser Gly Ile Leu Thr Val Phe Phe Cys Gly
        275                   280                   285
Ile Val Met Ser His Tyr Thr Trp His Asn Val Thr Glu Ser Ser Arg
        290                   295                   300
Val Thr Thr Lys His Ala Phe Ala Thr Leu Ser Phe Val Ala Glu Ile
305                   310                   315                   320
Phe Ile Phe Leu Tyr Val Gly Met Asp Ala Leu Asp Ile Glu Lys Trp
                325                   330                   335
Arg Phe Val Ser Asp Ser Pro Gly Thr Ser Val Ala Val Ser Ser Ile
 .      340                   345                   350
Leu Leu Gly Leu Leu Met Val Gly Arg Ala Leu Leu Phe Ser Leu Val
        355                   360                   365
Phe Leu Met Asn Leu Ser Lys Lys Ser Asn Ser Glu Lys Val Thr Phe
        370                   375                   380
Asn Gln Gln Ile Val Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val
385                   390                   395                   400
Ser Val Ala Leu Ala Tyr Asn Gln Phe Ser Arg Ser Gly His Thr Gln
                405                   410                   415
Leu Arg Gly Asn Ala Ile Met Ile Thr Ser Thr Ile Thr Val Val Leu
        420                   425                   430
Phe Ser Thr Met Val Phe Gly Leu Leu Thr Lys Pro Leu Ile Leu Phe
        435           .       440                   445
Met Leu Pro Gln Pro Lys His Phe Thr Ser Ala Ser Thr Val Ser Asp
        450                   455                   460
Leu Gly Ser Pro Lys Ser Phe Ser Leu Pro Leu Leu Glu Asp Arg Gln
465                   470                   475                   480
```

50

```
Asp Ser Glu Ala Asp Leu Gly Asn Asp Asp Glu Glu Ala Tyr Pro Arg
            485                 490                 495
Gly Thr Ile Ala Arg Pro Thr Ser Leu Arg Met Leu Leu Asn Ala Pro
            500                 505                 510
Thr His Thr Val His His Tyr Trp Arg Arg Phe Asp Asp Tyr Phe Met
            515                 520                 525
Arg Pro Val Phe Gly Gly Arg Gly Phe Val Pro Phe Val Pro Gly Ser
        530             535                 540
Pro Thr Glu Gln Ser Thr Thr Asn Leu Ser Gln Arg Thr
545             550                 555


<210> 36
<211> 538
<212> PRT
<213> Hordeum vulgare

<400> 36
Met Ala Phe Glu Val Val Ala Ala Gln Leu Ala Arg Leu Ser Asp Ala
  1             5                 10                  15
Leu Ala Thr Ser Asp His Ala Ser Val Val Ser Ile Asn Leu Phe Val
            20              25                  30
Ala Leu Leu Cys Ala Cys Ile Val Leu Gly His Leu Leu Glu Glu Asn
        35                  40                  45
Arg Trp Leu Asn Glu Ser Ile Thr Ala Leu Ile Ile Gly Leu Cys Thr
        50                  55                  60
Gly Val Val Ile Leu Met Thr Thr Lys Gly Lys Ser Ser His Val Leu
65                  70                  75                  80
Val Phe Ser Glu Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile
                85                  90                  95
Phe Asn Ala Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe
            100                 105                 110
Met Thr Ile Thr Leu Phe Gly Ala Val Gly Thr Met Ile Ser Phe Phe
            115                 120                 125
Thr Ile Ser Leu Ala Ala Ile Ala Ile Phe Ser Lys Met Asn Ile Gly
            130                 135                 140
Thr Leu Asp Val Ser Asp Phe Leu Ala Ile Gly Ala Ile Phe Ser Ala
145                 150                 155                 160
Thr Asp Ser Val Cys Thr Leu Gln Val Leu Asn Gln Asp Glu Thr Pro
                165                 170                 175
Phe Leu Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr
            180                 185                 190
Ser Val Val Leu Phe Asn Ala Leu Gln Asn Phe Asp Pro Asn Gln Ile
            195                 200                 205
Asp Ala Ile Val Ile Leu Lys Phe Leu Gly Asn Phe Cys Tyr Leu Phe
            210                 215                 220
Val Ser Ser Thr Phe Leu Gly Val Phe Ser Gly Leu Leu Ser Ala Tyr
225                 230                 235                 240
Ile Ile Lys Lys Leu Tyr Ile Gly Arg His Ser Thr Asp Arg Glu Val
            245                 250                 255
Ala Leu Met Met Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu
            260                 265                 270
Leu Asp Leu Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met
            275                 280                 285
Ser His Tyr Thr Trp His Asn Val Thr Glu Ser Ser Arg Val Thr Thr
            290                 295                 300
Lys His Ala Phe Ala Thr Leu Ser Phe Ile Ala Glu Thr Phe Leu Phe
```

51

```
305                    310                    315                    320
Leu Tyr Val Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Lys Phe Ala
                325                    330                    335
Ser Asp Ser Pro Gly Lys Ser Ile Gly Ile Ser Ser Ile Leu Leu Gly
                340                    345                    350
Leu Val Leu Val Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu
                355                    360                    365
Ser Asn Leu Thr Lys Lys Thr Glu Leu Glu Lys Ile Ser Trp Arg Gln
                370                    375                    380
Gln Ile Val Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Ile
385                    390                    395                    400
Ala Leu Ala Tyr Asn Lys Phe Thr Arg Ser Gly His Thr Gln Leu His
                405                    410                    415
Gly Asn Ala Ile Met Ile Thr Ser Thr Ile Thr Val Val Leu Phe Ser
                420                    425                    430
Thr Met Leu Phe Gly Ile Leu Thr Lys Pro Leu Ile Arg Phe Leu Leu
                435                    440                    445
Pro Ala Ser Ser Asn Gly Asp Pro Ser Glu Pro Ser Ser Pro Lys Ser
        450                    455                    460
Leu His Ser Pro Leu Leu Thr Ser Met Leu Gly Ser Asp Met Glu Ala
465                    470                    475                    480
Pro Leu Pro Ile Val Arg Pro Ser Ser Leu Arg Met Leu Ile Thr Lys
                485                    490                    495
Pro Thr His Thr Ile His Tyr Tyr Trp Arg Lys Phe Asp Asp Ala Leu
                500                    505                    510
Met Arg Pro Met Phe Gly Gly Arg Gly Phe Val Pro Tyr Ser Pro Gly
        515                    520                    525
Ser Pro Thr Asp Pro Asn Val Ile Val Ala
        530                    535
```

<210> 37
<211> 540
<212> PRT
<213> Hordeum brevisubulatum

<400> 37
```
Met Gly Trp Gly Leu Gly Asp Pro Pro Ala Asp Tyr Gly Ser Ile Met
  1             5                    10                   15
Ala Val Gly Leu Phe Val Ala Leu Met Cys Ile Cys Ile Ile Val Gly
                20                   25                   30
His Leu Leu Glu Glu Asn Arg Trp Met Asn Glu Ser Thr Thr Ala Leu
        35                   40                   45
Leu Leu Gly Leu Gly Ala Gly Thr Val Ile Leu Phe Ala Ser Ser Gly
        50                   55                   60
Lys Asn Ser Arg Leu Met Val Phe Ser Glu Asp Leu Phe Phe Ile Tyr
65                   70                   75                   80
Leu Leu Pro Pro Ile Ile Phe Asn Ala Gly Phe Gln Val Lys Lys Lys
                85                   90                   95
Gln Phe Phe Arg Asn Phe Met Thr Ile Thr Leu Phe Ala Val Val Gly
                100                  105                  110
Thr Leu Ile Ser Phe Ser Ile Ile Ser Leu Gly Ala Met Gly Leu Ile
        115                  120                  125
Ser Arg Leu Asn Ile Gly Ala Leu Glu Leu Gly Asp Tyr Leu Ala Leu
        130                  135                  140
Gly Ala Ile Phe Ser Ala Thr Asp Ser Val Cys Thr Leu Gln Val Leu
145                  150                  155                  160
```

```
Ser Gln Asp Glu Thr Pro Phe Leu Tyr Ser Leu Val Phe Gly Glu Gly
              165             170             175
Val Val Asn Asp Ala Thr Ser Val Val Leu Phe Asn Ala Ile Gln Asn
              180             185             190
Phe Asp Leu Gly Asn Phe Ser Ser Leu Lys Phe Leu Gln Phe Ile Gly
              195             200             205
Asn Phe Leu Tyr Leu Phe Gly Ala Ser Thr Phe Leu Gly Val Ala Ser
          210             215             220
Gly Leu Leu Ser Ala Tyr Val Ile Lys Lys Leu Tyr Phe Gly Arg His
225             230             235             240
Ser Thr Asp Arg Glu Val Ala Ile Met Met Leu Met Ala Tyr Leu Ser
              245             250             255
Tyr Met Leu Ala Glu Leu Leu Asp Leu Ser Gly Ile Leu Thr Val Phe
              260             265             270
Phe Cys Gly Ile Val Met Ser His Tyr Thr Trp His Asn Val Thr Glu
              275             280             285
Ser Ser Arg Val Thr Thr Lys His Ala Phe Ala Thr Leu Ser Phe Ile
          290             295             300
Ser Glu Thr Phe Leu Phe Leu Tyr Val Gly Met Asp Ala Leu Asp Ile
305             310             315             320
Glu Lys Trp Lys Ile Val Ser Glu Thr Tyr Ser Pro Met Lys Ser Ile
              325             330             335
Thr Leu Ser Ser Ile Ile Leu Ala Leu Val Leu Val Ala Arg Ala Ala
              340             345             350
Phe Val Phe Pro Leu Ser Tyr Leu Ser Asn Leu Thr Lys Lys Thr Ala
              355             360             365
Gly Glu Lys Ile Ser Ile Arg Gln Gln Val Ile Ile Trp Trp Ala Gly
          370             375             380
Leu Met Arg Gly Ala Val Ser Ile Ala Leu Ala Tyr Asn Lys Phe Ala
385             390             395             400
Lys Ser Gly His Thr Gln Leu Pro Ser Asn Ala Ile Met Ile Thr Ser
              405             410             415
Thr Ile Ile Ile Val Leu Phe Ser Thr Ile Val Phe Gly Leu Leu Thr
              420             425             430
Lys Pro Leu Ile Arg Leu Leu Ile Pro Ala Arg His Leu Thr Arg Glu
              435             440             445
Val Ser Ala Leu Ser Glu Pro Ser Ser Pro Lys Ser Phe Leu Glu Gln
          450             455             460
Leu Thr Val Asn Gly Pro Glu Thr Asp Val Glu Asn Gly Val Ser Ile
465             470             475             480
Arg Arg Pro Thr Ser Leu Arg Met Leu Leu Ala Ser Pro Thr Arg Ser
              485             490             495
Val His His Tyr Trp Arg Lys Phe Asp Asn Ala Phe Met Arg Pro Val
              500             505             510
Phe Gly Gly Arg Gly Phe Val Pro Phe Val Pro Gly Ser Pro Thr Glu
          515             520             525
Ser Ser Val Pro Leu Leu Ala His Gly Ser Glu Asn
          530             535             540
```

<210> 38
<211> 546
<212> PRT
<213> Hordeum vulgare

<400> 38
```
Met Gly Pro Asp Leu Gly Ala Leu Ala Leu Arg Tyr Thr Gly Leu Ala
```

53

```
 1                5                          10                         15
Val Ser Asp His Asp Ser Ile Val Ala Ile Asn Ile Phe Ile Ala Leu
            20              25                         30
Leu Cys Gly Cys Ile Val Phe Gly His Leu Leu Glu Gly Asn Arg Trp
            35              40                         45
Val Asn Glu Ser Thr Thr Ala Ile Val Leu Gly Leu Ile Thr Gly Gly
    50                  55                  60
Val Ile Leu Leu Cys Thr Lys Gly Val Asn Ser Arg Ile Leu Ile Phe
65                  70                  75                      80
Ser Glu Asp Ile Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe Asn
                85                  90                  95
Ala Gly Phe Gln Val Lys Lys Gln Phe Phe Arg Asn Phe Ala Thr
                100                 105                 110
Ile Ile Leu Phe Gly Ala Val Gly Thr Leu Ile Ser Phe Val Ile Ile
            115                 120                 125
Thr Leu Gly Ala Met Gly Leu Phe Arg Lys Leu Asp Val Gly Pro Leu
    130                 135                 140
Glu Leu Gly Asp Tyr Leu Ala Ile Gly Ala Ile Phe Ser Ala Thr Asp
145                 150                 155                     160
Ser Val Cys Thr Leu Gln Val Leu Asn Gln Asp Gln Ala Pro Leu Leu
                165                 170                 175
Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val
                180                 185                 190
Val Leu Phe Asn Ala Ile Gln Asn Ile Asp Leu Asn His Phe Asp Val
            195                 200                 205
Leu Val Leu Leu Gln Leu Ile Gly Lys Phe Leu Tyr Leu Phe Leu Thr
    210                 215                 220
Ser Thr Val Leu Gly Val Ala Ala Gly Leu Leu Ser Ala Tyr Ile Ile
225                 230                 235                     240
Lys Lys Leu Cys Phe Ala Arg His Ser Thr Asp Arg Glu Val Ala Ile
                245                 250                 255
Met Ile Leu Met Ala Tyr Leu Ser Tyr Met Leu Ser Met Leu Leu Asp
                260                 265                 270
Leu Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser His
            275                 280                 285
Tyr Thr Arg His Asn Val Thr Glu Ser Ser Arg Val Thr Thr Lys His
    290                 295                 300
Thr Phe Ala Thr Leu Ser Phe Ile Ala Glu Ile Phe Leu Phe Leu Tyr
305                 310                 315                     320
Val Gly Met Asp Ala Leu Asp Ile Asp Lys Trp Lys Leu Ala Ser Ser
                325                 330                 335
Ser Pro Lys Lys Pro Ile Ala Leu Ser Ala Val Ile Leu Gly Leu Val
                340                 345                 350
Met Val Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Tyr Leu Ser Asn
            355                 360                 365
Leu Ser Lys Lys Glu Ser His Pro Lys Ile Ser Phe Asn Gln Gln Val
    370                 375                 380
Ile Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Ile Ala Leu
385                 390                 395                     400
Ala Tyr Asn Lys Tyr Thr Thr Ser Gly His Thr Ala Val Arg Val Asn
                405                 410                 415
Ala Val Met Ile Thr Ser Thr Ile Ile Val Val Leu Phe Ser Thr Met
                420                 425                 430
Val Phe Gly Leu Leu Thr Lys Pro Leu Ile Asn Leu Leu Val Pro Pro
            435                 440                 445
Arg Pro Gly Thr Ala Ala Asp Ile Ser Ser Gln Ser Phe Leu Asp Pro
    450                 455                 460
```

54

Leu Thr Ala Ser Leu Leu Gly Ser Asp Phe Asp Val Gly Gln Leu Thr
465   470   475   480
Pro Gln Thr Asn Leu Gln Tyr Leu Leu Thr Met Pro Ser Arg Ser Val
            485   490   495
His Arg Val Trp Arg Lys Phe Asp Asp Lys Phe Met Arg Pro Met Phe
            500   505   510
Gly Gly Arg Gly Phe Val Pro Phe Val Pro Gly Ser Pro Ile Glu Arg
            515   520   525
Ser Val His Gly Pro Gly Leu Leu Gly Thr Val Thr Glu Ala Glu Asn
    530   535   540
Arg Ser
545